

Application of SOUTHERN CALIFORNIA GAS )  
COMPANY for authority to update its gas revenue )  
requirement and base rates )  
effective January 1, 2016 (U 904-G) )

Application No. 14-11-\_\_\_\_  
Exhibit No.: (SCG-18-CWP)

CAPITAL WORKPAPERS TO  
PREPARED DIRECT TESTIMONY  
OF CHRISTOPHER R. OLMSTED  
ON BEHALF OF SOUTHERN CALIFORNIA GAS COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA

NOVEMBER 2014



**2016 General Rate Case - APP  
INDEX OF WORKPAPERS**

**Exhibit SCG-18-CWP - INFORMATION TECHNOLOGY**

| DOCUMENT  | PAGE     |
|---|----------|
| <b>Overall Summary For Exhibit No. SCG-18-CWP</b>                               | <b>1</b> |
| Category: A. CS - Field & SCG Mtr Reading                                       | 2        |
| ..00775A - SCG METER READING HANDHELD SYSTEM REPLACEMENT                        | 3        |
| ..00777D - PT81396 PACER MDT REPLACEMENT  | 8        |
| ..00776W - PT15934 SOCALGAS CUSTOMER SERVICE FIELDS SUPERVISION & TECHNICIANS M | 13       |
| Category: B. CS - Office Operations   | 18       |
| ..00770J - PT51809 CCC AVAYA SYSTEM REFRESH                                     | 21       |
| ..00774E - PT15823 CCC GENESYS UPGRADE  | 26       |
| ..00777C - PT15920 SMALL CAP REQUESTS CUSTOPMER OPERATIONS TECHNOLOGY APPLIC    | 32       |
| ..00764E - PT14914 CUSTOMER ORDER COMMUNICATION                                 | 37       |
| ..00764H - PT15925 VOICE RECORDING AND QA TOOLS - COLLECTIONS AND BILLING       | 42       |
| ..00774L - PT81435 MY ACCOUNT TECHNOLOGY REFRESH                                | 47       |
| ..00774M - PT81423 MY ACCOUNT MOBILE 1C   | 58       |
| ..00774N - PT81424 SCG IVR PH 4   | 64       |
| ..00776V - PT81436 SCG MY BUSINESS ACCOUNT                                      | 72       |
| ..00784A - PT14826 - INTEGRATED CUSTOMER DATA & ANALYTICS                       | 80       |
| ..00764A - PT14843 CUSTOMER DATA CONTROL - PHASE II                             | 87       |
| ..00764D - PT14912 3RD PARTY DATA REQUEST WEB PORTAL                            | 92       |
| ..00764J - PT81418 CUSTOMER DATA CONTROLS PHASE 1                               | 97       |
| ..00764B - PT14875 COLLECTIONS OPTIMIZATION PHASE 2                             | 102      |
| ..00764C - PT14877 COLLECTIONS OPTIMIZATION PHASE 3                             | 107      |
| ..00764G - PT15878 COLLECTIONS OPTIMIZATION PHASE 4                             | 112      |
| ..00784B - PT81415 CREDIT & COLLECTIONS OPTIMIZATION                            | 117      |
| Category: D. CS- Information  | 122      |
| ..00774J - PT81439 ENVOY & MCS SYBASE DATABASE UPGRADE                          | 124      |
| ..00774C - PT14829 - SOCALGAS.COM TECHNOLOGY UPGRADE                            | 130      |
| ..00774G - PT14827 C&I NEXT GENERATION PHASE I                                  | 135      |
| ..00774I - PT15802 C&I NEXT GENERATION PHASE 2 AND 3                            | 140      |
| ..00754A - PT81421 CALIFORNIA PRODUCERS ENVOY                                   | 146      |
| ..00754B - GAS AND ELECTRIC HARMONIZATION                                       | 151      |
| ..00754C - LOW OFO AND EFO  | 156      |
| ..00766A - PT14869 NAESB EDIX UPGRADE   | 161      |
| ..00774K - PT81438 ENVOY MCS DATA CONTROLS                                      | 166      |
| ..00774B - PT14825 - EMAIL CAMPAIGN MANAGEMENT                                  | 173      |
| ..00774A - PT14803 - ENVOY NEXT GENERATION                                      | 180      |

**2016 General Rate Case - APP  
INDEX OF WORKPAPERS**

**Exhibit SCG-18-CWP - INFORMATION TECHNOLOGY**

| DOCUMENT  | PAGE |
|---|------|
| Category: E. Engineering & ES   | 185  |
| ..00776R - PT81419 PDA METER TEST LAB   | 187  |
| ..00776AA - PT16860 GIS GAS ENHANCEMENTS 2016                                   | 192  |
| ..00776E - PT14924 ENTERPRISE GIS UPLIFT  | 196  |
| ..00776P - PT81412 GAS GIS ENHANCEMENTS 2013                                    | 201  |
| ..00776Y - PT81461 GAS GIS PROJECT 2014   | 206  |
| ..00776Z - PT15859 GIS GAS ENHANCEMENTS 2015                                    | 212  |
| ..00776A - PT - 14807 CLICK UPGRADE   | 218  |
| Category: F. Environmental  | 228  |
| ..00786C - PT14862 GREENHOUSE GAS AND ENVIRONMENTAL SUSTAINABILITY MANAGEMENT T | 229  |
| Category: G. Gas Distribution   | 234  |
| ..00776AB - ELECTRONIC LEAK SURVEY  | 237  |
| ..00750A - PT81420 M&I COMPLIANCE REPORTING                                     | 241  |
| ..00776D - PT14919 CLICK AND SAP DISASTER RECOVERY TIER UPGRADE                 | 246  |
| ..00776F - PT15819 CONSTRUCTION PLANNING AND DESIGN CPD REPORTING ENHANCEMENT   | 252  |
| ..00776G - PT15820 SCG MAINTENANCE AND INSPECTION COMPLIANCE REPORTING          | 257  |
| ..00776H - PT15821 FIELD FORCE REPORTING  | 262  |
| ..00776N - PT16802 CLICK V8 FUNCTIONAL ENHANCEMENTS                             | 267  |
| ..00776O - PT81431 CLICK M&I M&R STABILIZATION                                  | 273  |
| ..00776Q - PT81428 SCG M&I GUIXT PHASE 2  | 278  |
| ..00786A - PT14810 - GAS OPERATIONS PERFORMANCE ANALYTICS (GOPA) PHASE 2        | 283  |
| ..00810A - PTCPD SCG CPD ENH PHASE 2  | 289  |
| ..00810B - PT13810 SCG CPD ENH PHASE 1  | 295  |
| ..00777E - PT81454 SCG FIELD MDT UPGRADE 2013                                   | 300  |
| Category: H. Information Technology   | 306  |
| ..00760B - PT15824 SCG DESKTOP HARDWARE REFRESH                                 | 320  |
| ..00760C - PT15868 SE 2015 MAINFRAME EXPANSION                                  | 325  |
| ..00760D - PT16934 EGRC INFRASTRUCTURE REFRESH                                  | 330  |
| ..00760F - PT81440 DATA CENTER NETWORK CORE                                     | 335  |
| ..00762A - PT14872 SCG 2014 ACTIVE DIRECTORY REFRESH                            | 340  |
| ..00762B - PT81355 SCG WAN REBUILD PH IV  | 345  |
| ..00762C - PT81442 SE NETWORK ATTACHED STORAGE (NAS) REPLACEMENT                | 350  |
| ..00762D - PT81443 SEU WIRELESS/SEMPRA VIRTUAL OFFICE UPGRADE AND EXPANSION     | 355  |
| ..00764I - PT16813 CIS FRONTEND ARCHITECTURE OPTIMIZATION                       | 361  |
| ..00768A - PT14854 SAP ECC AND BI ARCHIVING                                     | 366  |
| ..00768B - PT14855 BUSINESS OBJECTS UPGRADE                                     | 371  |
| ..00770AB - PT81316 WINDOWS 7 PLATFORM REPLACEMENT (W7U)                        | 376  |

**2016 General Rate Case - APP**  
**INDEX OF WORKPAPERS**

**Exhibit SCG-18-CWP - INFORMATION TECHNOLOGY**

| <b>DOCUMENT</b>   | <b>PAGE</b> |
|---|-------------|
| ..00770AC - PT81416 ENTERPRISE MESSAGING INFRASTRUCTURE                     | 380         |
| ..00770AD - PT81417 EDIX ENHANCEMENT - PHASE 2                              | 384         |
| ..00770AE - PT81426 SERVER REPLACEMENT-AIX RETIREMENT                       | 389         |
| ..00770AF - PT81433 ENTERPRISE VOICE SYSTEM REFRESH                         | 393         |
| ..00770AG - ROWS REFRESH OUT OF WARRANTY SERVERS.                           | 397         |
| ..00770A - PT14834 SEU WEB-AUDIO CONFERENCING AND INSTANT MESSAGING REFRESH | 402         |
| ..00770AH - PT201410 SEU CALL RECORDING REPLACEMENT                         | 420         |
| ..00770AI - PT201433 BACKUP SERVICES ENHANCEMENT                            | 424         |
| ..00770B - PT14835 MOBILE DEVICE MANAGEMENT INFRASTRUCTURE                  | 429         |
| ..00770D - PT14839 LOGGING INFRASTRUCTURE REFRESH                           | 434         |
| ..00770E - PT14846 GAS SCADA PERIMETER REFRESH                              | 439         |
| ..00770H - PT14889 SEU ENTERPRISE CALL RECORDING REFRESH                    | 444         |
| ..00770K - PT15844 WEB APPLICATION FIREWALL                                 | 449         |
| ..00770L - PT15874 ENTERPRISE RISK AND COMPLIANCE (EGRC) ARCHER EXPANSION   | 454         |
| ..00770M - PT15879 ENTERPRISE SOCIAL COMPUTING                              | 459         |
| ..00770N - PT15880 ITCS - APP-V AND UE-V                                    | 464         |
| ..00770O - PT15881 SCG VIDEO-ENABLED COLLABORATION ROOM UPGRADE             | 470         |
| ..00770P - PT15882 SEU TELEPRESENCE UPGRADE                                 | 475         |
| ..00770Q - PT15890 SCG INFRASTRUCTURE ROOMS COMPTON HEADQUARTER             | 480         |
| ..00770R - PT15896 SE SAN STORAGE EXPANSION                                 | 485         |
| ..00770S - PT15899 SE 2015 VMWARE VIEW VIRTUAL DESKTOP INFRASTRUCTURE       | 490         |
| ..00770T - PT15900 SCG INFRASTRUCTURE ROOMS (ANAHEIM IDF/SERVER ROOM)       | 495         |
| ..00770U - PT16892A SE INFRASTRUCTURE ENABLING SERVICES (DNS, DHCP, NTP)    | 500         |
| ..00770V - PT16892B SE SCOM 2012 UPGRADE                                    | 505         |
| ..00770X - PT16899B SE 2016 VMWARE VIEW VIRTUAL DESKTOP INFRASTRUCTURE      | 510         |
| ..00772A - PT14837 SCG FIELD AREA NETWORK                                   | 515         |
| ..00772B - PT14849 SCG CI SMALL CAP   | 521         |
| ..00772D - PT14851 SE LOCAL AREA NETWORK REFRESH                            | 526         |
| ..00772G - PT14871 SCG GAS SCADA CONVERT                                    | 531         |
| ..00772H - PT15883 SE CONVERGED COMPUTING INFRASTRUCTURE                    | 536         |
| ..00772I - PT15884 SE BACKUP SYSTEMS  | 542         |
| ..00772J - PT15891 SCG COMMUNICATIONS SHELTER                               | 547         |
| ..00772M - PT15911 SCG COMMUNICATIONS SHELTER                               | 552         |
| ..00772O - PT16891 2016 SCG COMMUNICATION SHELTER                           | 557         |
| ..00772P - PT15893A SE WIDE AREA NETWORK REFRESH                            | 562         |
| ..00772Q - PT16893B SCG COMMUNICATION SHELTER (BOX SPRINGS)                 | 567         |
| ..00772R - PT16894A SCG PRIVATE NETWORK EXPANSION                           | 572         |

**2016 General Rate Case - APP  
INDEX OF WORKPAPERS**

**Exhibit SCG-18-CWP - INFORMATION TECHNOLOGY**

| DOCUMENT  | PAGE |
|---|------|
| ..00772S - PT16894B SCG COMMUNICATION SHELTERS (DOUBLE MOUNTAIN)            | 577  |
| ..00772T - PT16895A SE REMOTE ACCESS SERVICES (VPN) REFRESH                 | 582  |
| ..00772U - PT81389 SCG BATTERY REPLACEMENT REENGINEER                       | 587  |
| ..00772V - PT81414 CORE NETWORK DESIGN                                      | 592  |
| ..00772W - PT81432 PRIVATE NETWORK EXPANSION AND REFRSH                     | 597  |
| ..00772X - DATA CENTER NETWORK REBUILD                                      | 603  |
| ..00774F - PT 15828 IN HOUSE EDI X12 SERVICES                               | 608  |
| ..00776B - PT14817 - BUSINESS PLANNING SIMULATION (BPS) REPLACEMENT PROJECT | 613  |
| ..00776J - PT15856 SAP BUSINESS WAREHOUSE 7.3 UPGRADE                       | 620  |
| ..00777B - PT14918 BANCTEC PAYMENT STATION SERVER REFRESH                   | 625  |
| ..00780A - PT14861 IDENTITY & ACCESS MANAGEMENT                             | 630  |
| ..00780C - PT81451 MANDIANT EXPANSION                                       | 638  |
| ..00782A - PT15898 SE APPLICATION PLATFORM TECHNOLOGY REFRESH               | 643  |
| ..00788C - PT15811 ENTERPRISE ANALYTICS SYSTEM (EAS) PHASE II               | 648  |
| ..00756C - PT81434 2016 GRC RESULTS OF OP MODEL                             | 653  |
| ..00751A - PT81380 SAP SUPER USER PROVISIONING                              | 658  |
| ..00760A - PT14853 ITSM TOOL OPTIMIZATION                                   | 664  |
| ..00760E - PT16935 FORENSICS LAB INFRASTRUCTURE REFRESH                     | 669  |
| ..00768C - PT15804 MICROSOFT BUSINESS INTELLIGENCE (BI) ENTERPRISE PLATFORM | 674  |
| ..00770AA - PT15932 WEB APPLICATION DATABASE FIREWALLS                      | 680  |
| ..00770C - PT14838 END POINT SECURITY PROJECT                               | 684  |
| ..00770F - PT14865 INFORMATION SECURITY - INFRASTRUCTURE RELIABILITY        | 690  |
| ..00770Y - PT 15930 INTRUSION PREVENTION SYSTEMS IPS REFRESH                | 695  |
| ..00770Z - PT15931 SOURCE CODE SECURITY                                     | 700  |
| ..00772C - PT14850 SE SYSTEM MANAGEMENT AND AUTOMATION                      | 705  |
| ..00772E - PT14852 SE ENTERPRISE APPLICATION MESSAGING AND CACHING PLATFORM | 710  |
| ..00772K - PT15891B SE EWE SELF SERVICE WEB PROVISION/DEPLOYMENT            | 715  |
| ..00772N - PT16884 SE BACKUP SYSTEMS  | 720  |
| ..00773A - PT81403 TELECOMMUNICATIONS EXPENSE MANAGEMENT                    | 725  |
| ..00776L - PT14925 EMPLOYEE CARE SERVICES IVOS CLAIMS SYSTEM AON ESOLUTIONS | 731  |
| ..00776M - PT15801 GIS SAP INTEGRATION                                      | 736  |
| ..00776U - PT81448 DESIGN ENGINEERING SW REPLACEMENT                        | 741  |
| ..00776X - PT81399 FINANCIAL ASSET MGMT (FAM)                               | 748  |
| ..00778A - PT14832 SHARE POINT  | 753  |
| ..00778B - PT14833 DATA LOSS PREVENTION                                     | 761  |
| ..00778C - PT14897 TRAVEL AND EXPENSE MOBILITY                              | 768  |
| ..00780B - PT16888 IDENTITY & ACCESS MANAGEMENT INFRASTRUCTURE REFRESH      | 773  |

**2016 General Rate Case - APP  
INDEX OF WORKPAPERS**

**Exhibit SCG-18-CWP - INFORMATION TECHNOLOGY**

| <b>DOCUMENT</b>  | <b>PAGE</b> |
|--|-------------|
| ..00788A - PT14805 - ENTERPRISE BI ANALYTICS AND DASHBOARDS - 2014 | 778         |
| ..00788B - PT15806 ENTERPRISE BI ANALYTICS AND DASHBOARDS - 2015   | 783         |
| ..00788D - PT16816 ENTERPRISE ANALYTICS SYSTEM (EAS) PHASE III     | 788         |
| ..00788E - PT16927 ENTERPRISE BI ANALYTICS AND DASHBOARDS          | 793         |
| Category: J. Supply Management                                     | 798         |
| ..00776S - PT81353 ECM REPLACEMENT                                 | 799         |
| ..00766B - PT14873 SAP LOGISTICS MOBILITY REFRESH                  | 804         |
| ..00776C - PT14876 SHOP TRACKING SYSTEM                            | 810         |
| ..00778D - PT15926 SAP ENTERPRISE MOBILITY                         | 816         |
| ..00778E - PT81407 E-PROCUREMENT IMPLEMENTATION                    | 821         |

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

**Overall Summary For Exhibit No. SCG-18-CWP**

|                 |                               |
|-----------------|-------------------------------|
| <b>Area:</b>    | <b>INFORMATION TECHNOLOGY</b> |
| <b>Witness:</b> | <b>Christopher R. Olmsted</b> |

| In 2013 \$ (000)                           |                |                |                |
|--|----------------|----------------|----------------|
| Adjusted-Forecast                          |                |                |                |
|  | 2014           | 2015           | 2016           |
| <b>A. CS - Field &amp; SCG Mtr Reading</b> | 3,096          | 437            | 7,217          |
| <b>B. CS - Office Operations</b>           | 17,610         | 14,645         | 6,967          |
| <b>D. CS- Information</b>                  | 5,069          | 12,717         | 2,478          |
| <b>E. Engineering &amp; ES</b>             | 2,231          | 4,639          | 8,893          |
| <b>F. Environmental</b>                    | 524            | 259            | 0              |
| <b>G. Gas Distribution</b>                 | 23,446         | 16,052         | 11,868         |
| <b>H. Information Technology</b>           | 48,697         | 68,673         | 67,103         |
| <b>J. Supply Management</b>                | 3,724          | 2,493          | 269            |
| <b>Total</b>                               | <b>104,397</b> | <b>119,915</b> | <b>104,795</b> |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Category: A. CS - Field & SCG Mtr Reading  
Workpaper: VARIOUS

**Summary for Category: A. CS - Field & SCG Mtr Reading**

|              | In 2013\$ (000)   |                   |            |              |
|--------------|-------------------|-------------------|------------|--------------|
|              | Adjusted-Recorded | Adjusted-Forecast |            |              |
|              | 2013              | 2014              | 2015       | 2016         |
| Labor        | 0                 | 304               | 237        | 532          |
| Non-Labor    | 0                 | 2,792             | 200        | 6,685        |
| NSE          | 0                 | 0                 | 0          | 0            |
| <b>Total</b> | <b>0</b>          | <b>3,096</b>      | <b>437</b> | <b>7,217</b> |
| FTE          | 0.0               | 3.0               | 2.4        | 5.2          |

**00775A SCG Meter Reading Handheld System Replacement**

|              |          |          |            |              |
|--------------|----------|----------|------------|--------------|
| Labor        | 0        | 0        | 234        | 523          |
| Non-Labor    | 0        | 0        | 10         | 6,150        |
| NSE          | 0        | 0        | 0          | 0            |
| <b>Total</b> | <b>0</b> | <b>0</b> | <b>244</b> | <b>6,673</b> |
| FTE          | 0.0      | 0.0      | 2.3        | 5.1          |

**00777D PT81396 PACER MDT REPLACEMENT**

|              |          |              |          |          |
|--------------|----------|--------------|----------|----------|
| Labor        | 0        | 297          | 0        | 0        |
| Non-Labor    | 0        | 2,378        | 0        | 0        |
| NSE          | 0        | 0            | 0        | 0        |
| <b>Total</b> | <b>0</b> | <b>2,675</b> | <b>0</b> | <b>0</b> |
| FTE          | 0.0      | 2.9          | 0.0      | 0.0      |

**00776W PT15934 SoCalGas Customer Service Fields Supervision & Technicians MDTs**

|              |          |            |            |            |
|--------------|----------|------------|------------|------------|
| Labor        | 0        | 7          | 3          | 9          |
| Non-Labor    | 0        | 414        | 190        | 535        |
| NSE          | 0        | 0          | 0          | 0          |
| <b>Total</b> | <b>0</b> | <b>421</b> | <b>193</b> | <b>544</b> |
| FTE          | 0.0      | 0.1        | 0.1        | 0.1        |

*Note: Totals may include rounding differences.*



**Beginning of Workpaper Group**  
**00775A - SCG Meter Reading Handheld System Replacement**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00775.0  
 Category: A. CS - Field & SCG Mtr Reading  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00775A - SCG Meter Reading Handheld System Replacement

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |              |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|--------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016         |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 234        | 523          |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 10         | 6,150        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0            |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>244</b> | <b>6,673</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 2.3        | 5.1          |

**Business Purpose:**

The cost for a new Meter Reading Handheld System was included as a benefit in SoCalGas' Advanced Meter business case. Because Advanced Meter related costs and benefits are recorded in the Advanced Meter Infrastructure Balancing Account ("AMIBA") for this GRC period, historical and forecast expenses are being adjusted to reflect costs without Advanced Meter benefits. SCG meter reading handheld computers will reach the end of its serviceable life because the vendor will no longer be supporting the current DAP 9500 and 9800 model handhelds. As the revenue billing cycle is dependent on a reliable collection and transmission system of meter reads to the customer information system (CIS), operating with hardware that is extremely old and non-supported leaves the revenue billing cycle vulnerable to not being able to accurately obtain the read and bill the customer. Options will be investigated to determine whether used models that are not at the end of their life might be available and/or whether vendors would be willing to continue to support end of life equipment.

**Physical Description:**

The project has two main components – hardware acquisition and integration of software with CIS. The hardware component involves upgrade of approximately 980 current handheld computer units (and 15 units for growth in the next two years) with new radio frequency (RF) based units, cradles, antennas, and set-up of the associated software into the units. The other component primarily involves the integration of new system software with CIS. This work involves SCG Information Technology (IT) working with the vendor consultants and includes necessary CIS testing with the Customer Service Systems and Technology (CSST) group. Other alternative solutions such as purchasing used hardware and/or extension of support on existing hardware will also be evaluated.

**Project Justification:**

There is risk to the revenue cycle process at SCG if handhelds fail and no other unit is available, resulting in an ever growing number of customer accounts estimated each month. Potential revenue loss and violation of CPUC tariff rules.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00775.0  
Category: A. CS - Field & SCG Mtr Reading  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00775A - SCG Meter Reading Handheld System Replacement

**Forecast Methodology:**

**Labor - Zero-Based**

Estimated cost is based on informal vendor quotes and IT estimates for CIS IT and CSST related work. Also, historic costs from prior system/handheld replacement projects were used as a framework for the two major components.

- Handheld unit costs estimated at 995 units x \$5025 = \$5,000,000
- Miscellaneous hardware, unit software and system software from vendor for \$900,000
- Vendor consulting/travel costs of \$250,000
- SCG IT labor of approximately 9,906 hours at \$49/hr = \$485,400
- CSST labor of approximately 1,800 hours at \$40/hr = \$72,000
- Meter Reading labor of approximately 2,646 hours at \$35/hr = \$92,600

**Non-Labor - Zero-Based**

Estimated cost is based on informal vendor quotes and IT estimates for CIS IT and CSST related work. Also, historic costs from prior system/handheld replacement projects were used as a framework for the two major components.

- Handheld unit costs estimated at 995 units x \$5025 = \$5,000,000
- Miscellaneous hardware, unit software and system software from vendor for \$900,000
- Vendor consulting/travel costs of \$250,000
- SCG IT labor of approximately 9,906 hours at \$49/hr = \$485,400
- CSST labor of approximately 1,800 hours at \$40/hr = \$72,000
- Meter Reading labor of approximately 2,646 hours at \$35/hr = \$92,600

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00775A**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00775.0  
 Category: A. CS - Field & SCG Mtr Reading  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00775A - SCG Meter Reading Handheld System Replacement  
 Workpaper Detail: 00775A.001 - SCG Meter Reading Handheld System Replacement  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |            |              |
|--------------------------|--------------|----------|------------|--------------|
| Years                    |              | 2014     | 2015       | 2016         |
| Labor                    |              | 0        | 234        | 523          |
| Non-Labor                |              | 0        | 10         | 6,150        |
| NSE                      |              | 0        | 0          | 0            |
|                          | <b>Total</b> | <b>0</b> | <b>244</b> | <b>6,673</b> |
| FTE                      |              | 0.0      | 2.3        | 5.1          |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00777D - PT81396 PACER MDT REPLACEMENT**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00777.0  
 Category: A. CS - Field & SCG Mtr Reading  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00777D - PT81396 PACER MDT REPLACEMENT

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016     |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 297               | 0        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 2,378             | 0        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>2,675</b>      | <b>0</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 2.9               | 0.0      | 0.0      |

**Business Purpose:**

The project is primarily a technical refresh that will replace ~1450 mission critical/Tier 1 model CF-18 MDTs used by SCG Customer Service employees, associated hardware, ancillary equipment and introduce an interim solution to provide increased wireless data capacity using a public broadband system or systems.  
 Continue high level of Employee/Customer Safety  
 Maintain high Customer Satisfaction  
 Avoid increased MDT maintenance cost  
 Reduce Field Tech down time  
 Fully Support SCG Advanced Meter Initiative  
 Support future customer experience initiatives and projects  
 Support Sempra's Operating System standard, Windows 7 & Support Sempra's hard Drive Encryption mandate  
 Provide infrastructure that will support New SCG Customer Service Dispatching application

**Physical Description:**

Replace ~1450 CF-18 MDTs with a Panasonic Ruggedized Tablet or Laptop MDT  
 Provide interim solution to expand wireless data capacity using public broadband network until an enterprise solution is built

**Project Justification:**

The project is primarily a technical refresh that will replace ~1450 mission critical/Tier 1 model CF-18 MDTs used by SCG Customer Service employees, associated hardware, ancillary equipment and introduce an interim solution to provide increased wireless data capacity using a public broadband system or systems.  
 Continue high level of Employee/Customer Safety  
 Maintain high Customer Satisfaction  
 Avoid increased MDT maintenance cost  
 Reduce Field Tech down time  
 Fully Support SCG Advanced Meter Initiative  
 Support future customer experience initiatives and projects  
 Support Sempra's Operating System standard, Windows 7 & Support Sempra's hard Drive Encryption mandate  
 Provide infrastructure that will support New SCG Customer Service Dispatching application

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00777.0  
Category: A. CS - Field & SCG Mtr Reading  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00777D - PT81396 PACER MDT REPLACEMENT

**Forecast Methodology:**

**Labor - Zero-Based**

The forecast is based upon the current project timeline.

**Non-Labor - Zero-Based**

The forecast is based upon the current project timeline.

**NSE - Zero-Based**

N/A



**Beginning of Workpaper Sub Details for  
Workpaper Group 00777D**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00777.0  
 Category: A. CS - Field & SCG Mtr Reading  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00777D - PT81396 PACER MDT REPLACEMENT  
 Workpaper Detail: 00777D.001 - PACER MDT REPLACEMENT  
 In-Service Date: 06/30/2014  
 Description:

| Forecast In 2013 \$(000) |              |          |          |  |
|--------------------------|--------------|----------|----------|--|
| Years                    | 2014         | 2015     | 2016     |  |
| Labor                    | 297          | 0        | 0        |  |
| Non-Labor                | 2,378        | 0        | 0        |  |
| NSE                      | 0            | 0        | 0        |  |
| <b>Total</b>             | <b>2,675</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 2.9          | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00776W - PT15934 SoCalGas Customer Service Fields Supervision & Technicians**  
**MDTs**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: A. CS - Field & SCG Mtr Reading  
 Category-Sub: 10. Growth/Capacity  
 Workpaper Group: 00776W - PT15934 SoCalGas Customer Service Fields Supervision & Technicians MDTs

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |            |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016       |
| <b>Years</b>    |            |                   |          |          |          |          |                   |            |            |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 7                 | 3          | 9          |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 414               | 190        | 535        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0          |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>421</b>        | <b>193</b> | <b>544</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.1               | 0.1        | 0.1        |

**Business Purpose:**

This project will install Mobile Data Terminals (MDTs), vehicle hardware (docking stations, mobile mounts, charge guards, etc.), and cabinet docks for incremental new hire Customer Service Fields (CSF) technicians and supervisors. The MDTs are the company standard device and are used by the CSF technicians to work customer service orders. The project cost is for new MDTs over the 2015 - 2016 timeframe

**Physical Description:**

"Blanket" project estimates are the purchase of Panasonic Toughbook MDTs and ancillary equipment that will be deployed to incremental new hire CSF technicians and supervisors over the 2015 - 2016 timeframe.

**Project Justification:**

Company standards are to issue MDTs to all CSF employees in order for them to receive routes and complete customer and company service orders. It is also a standard to issue Toughbook MDTs to field supervisors.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00776.0  
Category: A. CS - Field & SCG Mtr Reading  
Category-Sub: 10. Growth/Capacity  
Workpaper Group: 00776W - PT15934 SoCalGas Customer Service Fields Supervision & Technicians MDTs

**Forecast Methodology:**

**Labor - Zero-Based**

Current MDT, ancillary equipment, and contractor labor pricing was used to estimate total costs.

**Non-Labor - Zero-Based**

MDT deployment will be coordinated with CSF Operations and Telecommunications to determine new hire dates and arrivals to ensure MDTs are deployed as needed.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00776W**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: A. CS - Field & SCG Mtr Reading  
 Category-Sub: 10. Growth/Capacity  
 Workpaper Group: 00776W - PT15934 SoCalGas Customer Service Fields Supervision & Technicians MDTs  
 Workpaper Detail: 00776W.001 - SoCalGas Customer Service Field Supervision  
 In-Service Date: Not Applicable  
 Description:

| Forecast In 2013 \$(000) |              |            |            |            |
|--------------------------|--------------|------------|------------|------------|
| Years                    |              | 2014       | 2015       | 2016       |
| Labor                    |              | 7          | 3          | 9          |
| Non-Labor                |              | 414        | 190        | 535        |
| NSE                      |              | 0          | 0          | 0          |
|                          | <b>Total</b> | <b>421</b> | <b>193</b> | <b>544</b> |
| FTE                      |              | 0.1        | 0.1        | 0.1        |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Category: B. CS - Office Operations  
Workpaper: VARIOUS

**Summary for Category: B. CS - Office Operations**

|              | In 2013\$ (000)   |                   |               |              |
|--------------|-------------------|-------------------|---------------|--------------|
|              | Adjusted-Recorded | Adjusted-Forecast |               |              |
|              | 2013              | 2014              | 2015          | 2016         |
| Labor        | 0                 | 4,810             | 3,998         | 1,832        |
| Non-Labor    | 0                 | 12,800            | 10,647        | 5,135        |
| NSE          | 0                 | 0                 | 0             | 0            |
| <b>Total</b> | <b>0</b>          | <b>17,610</b>     | <b>14,645</b> | <b>6,967</b> |
| FTE          | 0.0               | 47.2              | 39.2          | 17.9         |

**00770J PT51809 CCC Avaya System Refresh**

|              |          |          |          |            |
|--------------|----------|----------|----------|------------|
| Labor        | 0        | 0        | 0        | 153        |
| Non-Labor    | 0        | 0        | 0        | 600        |
| NSE          | 0        | 0        | 0        | 0          |
| <b>Total</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>753</b> |
| FTE          | 0.0      | 0.0      | 0.0      | 1.5        |

**00774E PT15823 CCC Genesys Upgrade**

|              |          |          |          |            |
|--------------|----------|----------|----------|------------|
| Labor        | 0        | 0        | 0        | 252        |
| Non-Labor    | 0        | 0        | 0        | 349        |
| NSE          | 0        | 0        | 0        | 0          |
| <b>Total</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>601</b> |
| FTE          | 0.0      | 0.0      | 0.0      | 2.5        |

**00777C PT15920 Small Cap Requests Customer Operations Technology Application Server)**

|              |          |          |           |           |
|--------------|----------|----------|-----------|-----------|
| Labor        | 0        | 0        | 0         | 0         |
| Non-Labor    | 0        | 0        | 10        | 10        |
| NSE          | 0        | 0        | 0         | 0         |
| <b>Total</b> | <b>0</b> | <b>0</b> | <b>10</b> | <b>10</b> |
| FTE          | 0.0      | 0.0      | 0.0       | 0.0       |

**00764E PT14914 Customer Order Communication**

|              |          |            |            |          |
|--------------|----------|------------|------------|----------|
| Labor        | 0        | 131        | 570        | 0        |
| Non-Labor    | 0        | 110        | 343        | 0        |
| NSE          | 0        | 0          | 0          | 0        |
| <b>Total</b> | <b>0</b> | <b>241</b> | <b>913</b> | <b>0</b> |
| FTE          | 0.0      | 1.3        | 5.6        | 0.0      |

**00764H PT15925 Voice Recording and QA tools - Collections and Billing**

|              |          |          |            |          |
|--------------|----------|----------|------------|----------|
| Labor        | 0        | 0        | 21         | 0        |
| Non-Labor    | 0        | 0        | 382        | 0        |
| NSE          | 0        | 0        | 0          | 0        |
| <b>Total</b> | <b>0</b> | <b>0</b> | <b>403</b> | <b>0</b> |
| FTE          | 0.0      | 0.0      | 0.2        | 0.0      |

Note: Totals may include rounding differences.



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Category: B. CS - Office Operations  
Workpaper: VARIOUS

|  | In 2013\$ (000)   |                   |              |              |
|--|-------------------|-------------------|--------------|--------------|
|  | Adjusted-Recorded | Adjusted-Forecast |              |              |
|  | 2013              | 2014              | 2015         | 2016         |
| <b>00774L PT81435 My Account Technology Refresh</b>              |                   |                   |              |              |
| Labor  | 0                 | 1,746             | 1,662        | 295          |
| Non-Labor  | 0                 | 6,128             | 4,521        | 0            |
| NSE  | 0                 | 0                 | 0            | 0            |
| <b>Total</b>   | <b>0</b>          | <b>7,874</b>      | <b>6,183</b> | <b>295</b>   |
| FTE  | 0.0               | 17.1              | 16.3         | 2.7          |
| <b>00774M PT81423 My Account Mobile 1C</b>                       |                   |                   |              |              |
| Labor  | 0                 | 216               | 6            | 0            |
| Non-Labor  | 0                 | 1,057             | 410          | 0            |
| NSE  | 0                 | 0                 | 0            | 0            |
| <b>Total</b>   | <b>0</b>          | <b>1,273</b>      | <b>416</b>   | <b>0</b>     |
| FTE  | 0.0               | 2.1               | 0.1          | 0.0          |
| <b>00774N PT81424 SCG IVR Ph 4</b>                               |                   |                   |              |              |
| Labor  | 0                 | 521               | 65           | 0            |
| Non-Labor  | 0                 | 1,221             | 86           | 0            |
| NSE  | 0                 | 0                 | 0            | 0            |
| <b>Total</b>   | <b>0</b>          | <b>1,742</b>      | <b>151</b>   | <b>0</b>     |
| FTE  | 0.0               | 5.1               | 0.6          | 0.0          |
| <b>00776V PT81436 SCG My Business Account</b>                    |                   |                   |              |              |
| Labor  | 0                 | 121               | 157          | 58           |
| Non-Labor  | 0                 | 1,837             | 1,855        | 1,557        |
| NSE  | 0                 | 0                 | 0            | 0            |
| <b>Total</b>   | <b>0</b>          | <b>1,958</b>      | <b>2,012</b> | <b>1,615</b> |
| FTE  | 0.0               | 1.2               | 1.5          | 0.6          |
| <b>00784A PT14826 - Integrated Customer Data &amp; Analytics</b> |                   |                   |              |              |
| Labor  | 0                 | 241               | 572          | 7            |
| Non-Labor  | 0                 | 1,194             | 2,508        | 319          |
| NSE  | 0                 | 0                 | 0            | 0            |
| <b>Total</b>   | <b>0</b>          | <b>1,435</b>      | <b>3,080</b> | <b>326</b>   |
| FTE  | 0.0               | 2.4               | 5.6          | 0.1          |
| <b>00764A PT14843 Customer Data Control - Phase II</b>           |                   |                   |              |              |
| Labor  | 0                 | 55                | 527          | 0            |
| Non-Labor  | 0                 | 0                 | 0            | 0            |
| NSE  | 0                 | 0                 | 0            | 0            |
| <b>Total</b>   | <b>0</b>          | <b>55</b>         | <b>527</b>   | <b>0</b>     |
| FTE  | 0.0               | 0.5               | 5.2          | 0.0          |
| <b>00764D PT14912 3rd Party Data Request Web Portal</b>          |                   |                   |              |              |
| Labor  | 0                 | 0                 | 282          | 0            |
| Non-Labor  | 0                 | 0                 | 411          | 0            |
| NSE  | 0                 | 0                 | 0            | 0            |
| <b>Total</b>   | <b>0</b>          | <b>0</b>          | <b>693</b>   | <b>0</b>     |
| FTE  | 0.0               | 0.0               | 2.8          | 0.0          |

Note: Totals may include rounding differences.

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Category: B. CS - Office Operations  
Workpaper: VARIOUS

|   | In 2013\$ (000)   |                   |            |              |
|---|-------------------|-------------------|------------|--------------|
|   | Adjusted-Recorded | Adjusted-Forecast |            |              |
|   | 2013              | 2014              | 2015       | 2016         |
| <b>00764J PT81418 Customer Data Controls Phase 1</b>        |                   |                   |            |              |
| Labor   | 0                 | 956               | 0          | 0            |
| Non-Labor   | 0                 | 764               | 0          | 0            |
| NSE   | 0                 | 0                 | 0          | 0            |
| <b>Total</b>  | <b>0</b>          | <b>1,720</b>      | <b>0</b>   | <b>0</b>     |
| FTE   | 0.0               | 9.4               | 0.0        | 0.0          |
| <b>00764B PT14875 Collections Optimization Phase 2</b>      |                   |                   |            |              |
| Labor   | 0                 | 267               | 0          | 0            |
| Non-Labor   | 0                 | 107               | 0          | 0            |
| NSE   | 0                 | 0                 | 0          | 0            |
| <b>Total</b>  | <b>0</b>          | <b>374</b>        | <b>0</b>   | <b>0</b>     |
| FTE   | 0.0               | 2.6               | 0.0        | 0.0          |
| <b>00764C PT14877 Collections Optimization Phase 3</b>      |                   |                   |            |              |
| Labor   | 0                 | 282               | 136        | 0            |
| Non-Labor   | 0                 | 365               | 121        | 0            |
| NSE   | 0                 | 0                 | 0          | 0            |
| <b>Total</b>  | <b>0</b>          | <b>647</b>        | <b>257</b> | <b>0</b>     |
| FTE   | 0.0               | 2.8               | 1.3        | 0.0          |
| <b>00764G PT15878 Collections Optimization Phase 4</b>      |                   |                   |            |              |
| Labor   | 0                 | 0                 | 0          | 1,067        |
| Non-Labor   | 0                 | 0                 | 0          | 2,300        |
| NSE   | 0                 | 0                 | 0          | 0            |
| <b>Total</b>  | <b>0</b>          | <b>0</b>          | <b>0</b>   | <b>3,367</b> |
| FTE   | 0.0               | 0.0               | 0.0        | 10.5         |
| <b>00784B PT81415 Credit &amp; Collections Optimization</b> |                   |                   |            |              |
| Labor   | 0                 | 274               | 0          | 0            |
| Non-Labor   | 0                 | 17                | 0          | 0            |
| NSE   | 0                 | 0                 | 0          | 0            |
| <b>Total</b>  | <b>0</b>          | <b>291</b>        | <b>0</b>   | <b>0</b>     |
| FTE   | 0.0               | 2.7               | 0.0        | 0.0          |

Note: Totals may include rounding differences.

**Beginning of Workpaper Group**  
**00770J - PT51809 CCC Avaya System Refresh**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: B. CS - Office Operations  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770J - PT51809 CCC Avaya System Refresh

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |              | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |            |
|-----------------|--------------|-------------------|----------|----------|----------|----------|-------------------|----------|------------|
|                 |              | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016       |
|                 | <b>Years</b> |                   |          |          |          |          |                   |          |            |
| Labor           | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 153        |
| Non-Labor       | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 600        |
| NSE             | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0          |
|                 | <b>Total</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>0</b> | <b>753</b> |
| FTE             | Zero-Based   | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.0      | 1.5        |

**Business Purpose:**

The Customer Contact Center Call Telephony System is aging and approaching the end of manufacturer support. The proposed option will be to refresh the Avaya Telephony system.

**Physical Description:**

Scope of the project will be to refresh the current Customer Contact Center Telephony system extending the life of the system will benefit the Company for the future.

**Project Justification:**

Upgrading the system will ensure that the telephony system is supportable by the manufacturer. System reliability and availability will be assured with continued manufacturer support.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00770.0  
Category: B. CS - Office Operations  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00770J - PT51809 CCC Avaya System Refresh

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00770J**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: B. CS - Office Operations  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770J - PT51809 CCC Avaya System Refresh  
 Workpaper Detail: 00770J.001 - The Customer Contact Center Call Telephony System is aging and approaching the end of m  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |          |          |            |  |
|--------------------------|----------|----------|------------|--|
| Years                    | 2014     | 2015     | 2016       |  |
| Labor                    | 0        | 0        | 153        |  |
| Non-Labor                | 0        | 0        | 600        |  |
| NSE                      | 0        | 0        | 0          |  |
| <b>Total</b>             | <b>0</b> | <b>0</b> | <b>753</b> |  |
| FTE                      | 0.0      | 0.0      | 1.5        |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00774E - PT15823 CCC Genesys Upgrade**



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: B. CS - Office Operations  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00774E - PT15823 CCC Genesys Upgrade

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |            |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016       |
| <b>Years</b>    |            |                   |          |          |          |          |                   |          |            |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 252        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 349        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0          |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>0</b> | <b>601</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.0      | 2.5        |

**Business Purpose:**

SDG&E and SoCalGas Customer Contact Centers (CCC) use Genesys Interactive Voice Response (IVR) System to provide IVR self-service as well as route customer calls to CCC agents. The Genesys IVR works in combination with the Avaya telephony system. The 2013 Genesys Assessment Project made several recommendations for optimization of the IVR system. Among those recommendation was that the Genesys IVR system be upgraded from version 7.6 to version 8.x.

**Physical Description:**

This project provides for the professional services, internal labor, and hardware/software required for upgrading the Genesys IVR system from version 7.6 to version 8.x.

**Project Justification:**

Improved optimization and reliability of the IVR system. This upgrade will allow continued supportability by remaining on a current software release. Provides standard deployment scripts, reducing deployment errors. Easier to debug and much more efficient at run time (will take advantage of document and compiled file caching). Provides for improved backend connectivity including web services. HTTP and database access. Allows applications to be load balanced much easier on the application server side and eliminates the requirements for stick-session load balancers reducing hardware and operational costs. Improved application monitoring for custom developed SNMP traps. Lower learning curve, training costs. Genesys Administrator is a single administrative view, easier to maintain and administer, lower operating costs. Ability to manage both IVR and routing from a remote location, quicker response to issues. Single database for GVP and CIM configuration information. Ability to create ad-hoc type reports without having to use complicated SQL type inquiry, allowing end users to retrieve data without technical help. Can create custom reports using standard business Intelligence tools for complex usage reporting if required. Quality Advisor and Call Analyst reporting. \*GVP 8.2. Better use of IVR related resources (ASR, TTS, IVR ports). Ability to provide advanced high availability features, minimizing down time due to hardware or software failures. Increased performance and the ability to control caching, eliminating the need to restart system to purge cached VoiceXML pages or audio files. Single metrics file instead of multiple debug log files, standardized format reducing time to find and solve issues. Applications can run 30 to 50% faster then on previous versions due to pre compiling and caching of compiled code and new techniques used in the engine to increase the efficiency of the rendering engine. Allows for G.729 and other compressed formats to be transcoded to G.7

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00774.0  
Category: B. CS - Office Operations  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00774E - PT15823 CCC Genesys Upgrade

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00774E**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: B. CS - Office Operations  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00774E - PT15823 CCC Genesys Upgrade  
 Workpaper Detail: 00774E.001 - SDG&E and SoCalGas Customer Contact Centers (CCC) use Genesys Interactive Voice Respor  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |          |            |  |
|--------------------------|--------------|----------|----------|------------|--|
| Years                    |              | 2014     | 2015     | 2016       |  |
| Labor                    |              | 0        | 0        | 204        |  |
| Non-Labor                |              | 0        | 0        | 277        |  |
| NSE                      |              | 0        | 0        | 0          |  |
|                          | <b>Total</b> | <b>0</b> | <b>0</b> | <b>481</b> |  |
| FTE                      |              | 0.0      | 0.0      | 2.0        |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: B. CS - Office Operations  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00774E - PT15823 CCC Genesys Upgrade  
 Workpaper Detail: 00774E.002 - SDG&E and SoCalGas Customer Contact Centers (CCC) use Genesys Interactive Voice Respor  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |          |            |  |
|--------------------------|--------------|----------|----------|------------|--|
| Years                    |              | 2014     | 2015     | 2016       |  |
| Labor                    |              | 0        | 0        | 48         |  |
| Non-Labor                |              | 0        | 0        | 72         |  |
| NSE                      |              | 0        | 0        | 0          |  |
|                          | <b>Total</b> | <b>0</b> | <b>0</b> | <b>120</b> |  |
| FTE                      |              | 0.0      | 0.0      | 0.5        |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00777C - PT15920 Small Cap Requests Customer Operations Technology**  
**Application Server)**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00777.0  
 Category: B. CS - Office Operations  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00777C - PT15920 Small Cap Requests Customer Operations Technology Application Server)

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |           |           |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|-----------|-----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015      | 2016      |
| <b>Years</b>    |            |                   |          |          |          |          |                   |           |           |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0         | 0         |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 10        | 10        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0         | 0         |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>10</b> | <b>10</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.0       | 0.0       |

**Business Purpose:**

Replace two servers that are end of useful life (ap-mmbdw-p01 & ap-mmbdw-p02). These servers are used for 1) storing business procedures and documentation, 2) storing data that is used for business analysis, and 3) generating reports.

**Physical Description:**

Replace two servers that are end of useful life (ap-mmbdw-p01 & ap-mmbdw-p02).

**Project Justification:**

Risk of not being able to maintain electronic business procedures and documentation, as well as the ability to perform analysis for Major Markets Billing and creating reports.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00777.0  
Category: B. CS - Office Operations  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00777C - PT15920 Small Cap Requests Customer Operations Technology Application Server)

**Forecast Methodology:**

**Labor - Zero-Based**

N/A

**Non-Labor - Zero-Based**

Estimate based on one server acquired in 2015 at \$10k, and one server acquired in 2016 at \$10K

**NSE - Zero-Based**

N/A



**Beginning of Workpaper Sub Details for  
Workpaper Group 00777C**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00777.0  
 Category: B. CS - Office Operations  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00777C - PT15920 Small Cap Requests Customer Operations Technology Application Server)  
 Workpaper Detail: 00777C.001 - Small Cap Requests (Cust Ops Tech App Svr)  
 In-Service Date: 06/30/2016  
 Description:

| Forecast In 2013 \$(000) |          |           |           |  |
|--------------------------|----------|-----------|-----------|--|
| Years                    | 2014     | 2015      | 2016      |  |
| Labor                    | 0        | 0         | 0         |  |
| Non-Labor                | 0        | 10        | 10        |  |
| NSE                      | 0        | 0         | 0         |  |
| <b>Total</b>             | <b>0</b> | <b>10</b> | <b>10</b> |  |
| FTE                      | 0.0      | 0.0       | 0.0       |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00764E - PT14914 Customer Order Communication**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00764.0  
 Category: B. CS - Office Operations  
 Category-Sub: 2. Improving Customer Experience  
 Workpaper Group: 00764E - PT14914 Customer Order Communication

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016     |
| Years           |            |                   |          |          |          |          |                   |            |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 131               | 570        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 110               | 343        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>241</b>        | <b>913</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 1.3               | 5.6        | 0.0      |

**Business Purpose:**

This project will provide residential customers timely information about their service order from the time the order is initiated through when the order is completed. Customers will have the option to provide notification preferences when requesting a service order through the CCC or self-service options.

**Physical Description:**

Communication options will include notification method (email, call, text, etc.) and timing preferences for order status. Order types include start service, appliance service / inspection and high bill investigations ("HBI"s).

**Project Justification:**

Currently, customers have limited options for receiving information about their order status. Customers may not remember the specific details of their orders such as date, appointment window and access arrangements. Two-thirds of customers indicated their opinion of SoCalGas would increase if they received a notification the day of their appointment.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00764.0  
Category: B. CS - Office Operations  
Category-Sub: 2. Improving Customer Experience  
Workpaper Group: 00764E - PT14914 Customer Order Communication

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00764E**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00764.0  
 Category: B. CS - Office Operations  
 Category-Sub: 2. Improving Customer Experience  
 Workpaper Group: 00764E - PT14914 Customer Order Communication  
 Workpaper Detail: 00764E.001 - Customer Order Communication  
 In-Service Date: 08/31/2015  
 Description:

| Forecast In 2013 \$(000) |            |            |          |  |
|--------------------------|------------|------------|----------|--|
| Years                    | 2014       | 2015       | 2016     |  |
| Labor                    | 131        | 570        | 0        |  |
| Non-Labor                | 110        | 343        | 0        |  |
| NSE                      | 0          | 0          | 0        |  |
| <b>Total</b>             | <b>241</b> | <b>913</b> | <b>0</b> |  |
| FTE                      | 1.3        | 5.6        | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00764H - PT15925 Voice Recording and QA tools - Collections and Billing**



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00764.0  
 Category: B. CS - Office Operations  
 Category-Sub: 2. Improving Customer Experience  
 Workpaper Group: 00764H - PT15925 Voice Recording and QA tools - Collections and Billing

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |            |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 21         | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 382        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>403</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.2        | 0.0      |

**Business Purpose:**

Provide the ability to record phone calls for Billing and Collections groups. Provide the ability to perform Quality Assurance functions for phone calls.

**Physical Description:**

Implement Voice Recording Solution and QA tools for Billing and Collections.

**Project Justification:**

- Increase effectiveness interaction with Customer.
- Provide tools for coaching effective customer interaction.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00764.0  
Category: B. CS - Office Operations  
Category-Sub: 2. Improving Customer Experience  
Workpaper Group: 00764H - PT15925 Voice Recording and QA tools - Collections and Billing

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00764H**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00764.0  
 Category: B. CS - Office Operations  
 Category-Sub: 2. Improving Customer Experience  
 Workpaper Group: 00764H - PT15925 Voice Recording and QA tools - Collections and Billing  
 Workpaper Detail: 00764H.001 - Provide the ability to record phone calls for Billing and Collections groups. Provide  
 In-Service Date: 07/31/2015  
 Description:

| Forecast In 2013 \$(000) |          |            |          |  |
|--------------------------|----------|------------|----------|--|
| Years                    | 2014     | 2015       | 2016     |  |
| Labor                    | 0        | 21         | 0        |  |
| Non-Labor                | 0        | 382        | 0        |  |
| NSE                      | 0        | 0          | 0        |  |
| <b>Total</b>             | <b>0</b> | <b>403</b> | <b>0</b> |  |
| FTE                      | 0.0      | 0.2        | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00774L - PT81435 My Account Technology Refresh**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: B. CS - Office Operations  
 Category-Sub: 2. Improving Customer Experience  
 Workpaper Group: 00774L - PT81435 My Account Technology Refresh

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |              | Adjusted Recorded |          |          |          |          | Adjusted Forecast |              |            |
|-----------------|--------------|-------------------|----------|----------|----------|----------|-------------------|--------------|------------|
|                 |              | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015         | 2016       |
|                 | <b>Years</b> |                   |          |          |          |          |                   |              |            |
| Labor           | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 1,746             | 1,662        | 295        |
| Non-Labor       | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 6,128             | 4,521        | 0          |
| NSE             | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 0            | 0          |
|                 | <b>Total</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>7,874</b>      | <b>6,183</b> | <b>295</b> |
| FTE             | Zero-Based   | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 17.1              | 16.3         | 2.7        |

**Business Purpose:**

This project will replace SCG My Account system that provides online access to schedule services and enables customers to review, manage or pay their bills online. Major components of My Account Portal and Electronic Bill Payment & Processing (EBPP) applications are approaching end of life and need to be upgraded, expanded or replaced in order to support business needs around My Account growth, performance and availability.

My Account software currently consists of several separate systems and platforms that will be replaced with new integrated software, including:

The My Account Portal created with BEA Weblogic – Oracle’s legacy platform with sunset date in 2017.

EBPP package purchased from eDocs and consequently sold to Oracle – No longer supported.

Several authentication and authorization servers.

Several web services to/from the Portal and EBPP to CIS (the customer system of record). Currently they are poorly synchronized and customers cannot get real-time updated billing information.

**Physical Description:**

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00774.0  
Category: B. CS - Office Operations  
Category-Sub: 2. Improving Customer Experience  
Workpaper Group: 00774L - PT81435 My Account Technology Refresh

Ability to support organic Growth of My Account (# of users and self-service transactions)  
High Availability  
Ability to support organic Growth of My Account (# of users and self-service transactions)  
High Availability  
Mobility and Multi-Device Support  
Multi-language Support  
Maintain existing features and functions  
Increase Self-Service Adoption and Value  
Performance Improvements  
Provide higher level of guarantee that revenue generation and collection via Web is not interrupted  
Improve ability to adapt as business needs change  
Extensibility and Agility of My Account  
Empower the business to perform some basic day-to-day tasks (i.e. updating content, images, etc.)  
Retain Accessibility features and functions (WCAG AA standard)  
Create framework to support future requirements for large scale (C&I) many to many entity relationship management  
Ability to report and satisfy regulatory or legal audits with full audit trail of My Account and EBPP for required historic timeframe  
Modernize aging/end-of-life technology infrastructure to better support business drives  
Need for architecture that better promotes reuse and other technical objectives  
Enhance and enable effective technical implementation and governance  
Optimize Software Development, Configuration Management and Release Management Processes.  
Service enable EBPP for Tighter Integration with Portal.  
Develop code aligned with modern standards with reuse, maintainability, and more robust logging/debugging

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00774.0  
Category: B. CS - Office Operations  
Category-Sub: 2. Improving Customer Experience  
Workpaper Group: 00774L - PT81435 My Account Technology Refresh

considerations.

Extensible & scalable system that will reduce maintenance costs and reduce cycle time to market

Maintain/improve current end-to-end response time.

**Project Justification:**

My Account is becoming the "virtual call center" for our customers, is the face of our company on the web and on our customers mobile phones. To avoid letting this business critical platform becoming obsolete, SCG must invest in My Account platform for keeping it current in terms capacity, reliability and performance.

Improved stability and dependability of My Account is foundational as we continue to promote our online services to replace costlier transaction channels and realize operational efficiencies.

The infrastructure needed to provide the capacity and scalability of the My Account system that will be asked to process up to ½ of the customer revenue and over 25% of service transactions in coming years.

Increased fail-over capability to reduce system outages that impact the customers' ability to transact business and in turn, impact the Contact Center with increased call volume. Estimated to cost \$47K per day, that cost would grow exponentially during a multiple day outage as customers lost faith in our online services.

Provide My Account online services and EBPP across the multiple device types and sizes while minimizing the resultant cost to maintain the multiple footprints.

Increased security for our customer data as both the company and customers face an ever-increasing online threat, and the company faces ever-increasing data security legislation.

*Note: Totals may include rounding differences.*



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00774.0  
Category: B. CS - Office Operations  
Category-Sub: 2. Improving Customer Experience  
Workpaper Group: 00774L - PT81435 My Account Technology Refresh

**Forecast Methodology:**

**Labor - Zero-Based**

The forecast is based upon the current project timeline.

**Non-Labor - Zero-Based**

The forecast is based upon the current project timeline.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00774L**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: B. CS - Office Operations  
 Category-Sub: 2. Improving Customer Experience  
 Workpaper Group: 00774L - PT81435 My Account Technology Refresh  
 Workpaper Detail: 00774L.001 - My Account Tech Refresh  
 In-Service Date: 12/31/2014  
 Description:

| Forecast In 2013 \$(000) |              |          |          |  |
|--------------------------|--------------|----------|----------|--|
| Years                    | 2014         | 2015     | 2016     |  |
| Labor                    | 1,746        | 0        | 0        |  |
| Non-Labor                | 4,607        | 0        | 0        |  |
| NSE                      | 0            | 0        | 0        |  |
| <b>Total</b>             | <b>6,353</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 17.1         | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: B. CS - Office Operations  
 Category-Sub: 2. Improving Customer Experience  
 Workpaper Group: 00774L - PT81435 My Account Technology Refresh  
 Workpaper Detail: 00774L.002 - My Account Tech Refresh  
 In-Service Date: 12/31/2014  
 Description:

| Forecast In 2013 \$(000) |              |          |          |  |
|--------------------------|--------------|----------|----------|--|
| Years                    | 2014         | 2015     | 2016     |  |
| Labor                    | 0            | 0        | 0        |  |
| Non-Labor                | 1,089        | 0        | 0        |  |
| NSE                      | 0            | 0        | 0        |  |
| <b>Total</b>             | <b>1,089</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 0.0          | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: B. CS - Office Operations  
 Category-Sub: 2. Improving Customer Experience  
 Workpaper Group: 00774L - PT81435 My Account Technology Refresh  
 Workpaper Detail: 00774L.003 - My Account Tech Refresh  
 In-Service Date: 12/31/2014  
 Description:

| Forecast In 2013 \$(000) |            |          |          |  |
|--------------------------|------------|----------|----------|--|
| Years                    | 2014       | 2015     | 2016     |  |
| Labor                    | 0          | 0        | 0        |  |
| Non-Labor                | 432        | 0        | 0        |  |
| NSE                      | 0          | 0        | 0        |  |
| <b>Total</b>             | <b>432</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 0.0        | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: B. CS - Office Operations  
 Category-Sub: 2. Improving Customer Experience  
 Workpaper Group: 00774L - PT81435 My Account Technology Refresh  
 Workpaper Detail: 00774L.004 - My Account Tech Refresh  
 In-Service Date: 12/31/2015  
 Description:

| Forecast In 2013 \$(000) |              |          |              |          |
|--------------------------|--------------|----------|--------------|----------|
| Years                    |              | 2014     | 2015         | 2016     |
| Labor                    |              | 0        | 1,662        | 0        |
| Non-Labor                |              | 0        | 3,775        | 0        |
| NSE                      |              | 0        | 0            | 0        |
|                          | <b>Total</b> | <b>0</b> | <b>5,437</b> | <b>0</b> |
| FTE                      |              | 0.0      | 16.3         | 0.0      |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: B. CS - Office Operations  
 Category-Sub: 2. Improving Customer Experience  
 Workpaper Group: 00774L - PT81435 My Account Technology Refresh  
 Workpaper Detail: 00774L.005 - My Account Tech Refresh  
 In-Service Date: 03/31/2016  
 Description:

| Forecast In 2013 \$(000) |          |            |            |  |
|--------------------------|----------|------------|------------|--|
| Years                    | 2014     | 2015       | 2016       |  |
| Labor                    | 0        | 0          | 295        |  |
| Non-Labor                | 0        | 746        | 0          |  |
| NSE                      | 0        | 0          | 0          |  |
| <b>Total</b>             | <b>0</b> | <b>746</b> | <b>295</b> |  |
| FTE                      | 0.0      | 0.0        | 2.7        |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00774M - PT81423 My Account Mobile 1C**



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: B. CS - Office Operations  
 Category-Sub: 2. Improving Customer Experience  
 Workpaper Group: 00774M - PT81423 My Account Mobile 1C

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |            |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 216               | 6          | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 1,057             | 410        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1,273</b>      | <b>416</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 2.1               | 0.1        | 0.0      |

**Business Purpose:**

Project will extend My Account SMS text communication capabilities to 2-way texting. Proposed new scope will allow customers to receive a bill ready notification, obtain current balance and make payments. The project will increase existing transaction tracking and reporting capabilities to include mobile channel.

Project will also implement self service order functionality on My Account mobile web platform for payment arrangements.

**Physical Description:**

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00774.0  
Category: B. CS - Office Operations  
Category-Sub: 2. Improving Customer Experience  
Workpaper Group: 00774M - PT81423 My Account Mobile 1C

This project will continue to build upon the mobile "web" platform created in previous My Account mobile projects, by offering self-service orders and additional texting capabilities. Project will deliver the following:

SMS Text: Enhance/add 1 and 2 way alerts related to Bill Payment (e.g., bill ready notifications, bill payment via text capability)

Mobile Web Self-Service Orders:

Gas Appliance Service order

Payment Arrangements/Extensions

Stop Service order

Third Party Tools: Mobile Analytics & Testing tools

Reporting Capabilities: Track and Report Mobile Transactions Volumes

Capture audit trail for payments and emergency text messages by leveraging SVOC and EBPP tables

The sms texting vendor will need to provide delivery results on a daily basis

EDIX will need to receive the delivery result file and provide results to appropriate systems based on rules to be determined

Leverage existing architecture (i.e. iContact, customer preference center) to support the new texting channel

System handling the transactions will be responsible for maintaining the continuity of the text conversations

Gas Appliance Service Order, Payment Arrangement/Extension, Stop Service Order and will need successfully pass performance and endurance test

Adhere to Sempra Information Security standards and requirements

**Project Justification:**

Converting approximately 360,000 My Account users who currently opt out of paperless back to paper is a cost savings of \$1.6M over 5 years

Avoided costs: Increasing completion rates of online self service transactions is a cost avoidance of \$550K over 5 years.

Maintain/Increase customer satisfaction. Keep up with customer's expectations.

Contain customers using self service by offering mobile channel for self-service orders.

Increase paperless billing adoption by increasing access/awareness to online view and pay bill functions

Increase paperless billing adoption by increasing access/awareness to online view and pay bill functions

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00774.0  
Category: B. CS - Office Operations  
Category-Sub: 2. Improving Customer Experience  
Workpaper Group: 00774M - PT81423 My Account Mobile 1C

**Forecast Methodology:**

**Labor - Zero-Based**

The forecast is based upon the current project timeline.

**Non-Labor - Zero-Based**

The forecast is based upon the current project timeline.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00774M**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: B. CS - Office Operations  
 Category-Sub: 2. Improving Customer Experience  
 Workpaper Group: 00774M - PT81423 My Account Mobile 1C  
 Workpaper Detail: 00774M.001 - My Account Mobile 1C  
 In-Service Date: 02/28/2015  
 Description:

| Forecast In 2013 \$(000) |              |            |          |  |
|--------------------------|--------------|------------|----------|--|
| Years                    | 2014         | 2015       | 2016     |  |
| Labor                    | 216          | 6          | 0        |  |
| Non-Labor                | 1,057        | 410        | 0        |  |
| NSE                      | 0            | 0          | 0        |  |
| <b>Total</b>             | <b>1,273</b> | <b>416</b> | <b>0</b> |  |
| FTE                      | 2.1          | 0.1        | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group  
00774N - PT81424 SCG IVR Ph 4**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: B. CS - Office Operations  
 Category-Sub: 2. Improving Customer Experience  
 Workpaper Group: 00774N - PT81424 SCG IVR Ph 4

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |            |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 521               | 65         | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 1,221             | 86         | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1,742</b>      | <b>151</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 5.1               | 0.6        | 0.0      |

**Business Purpose:**

This project will implement functional and usability changes to the SCG Interactive Voice Response (IVR) system. New transactions will be added and the usability of existing transactions will be improved to streamline areas where customers are struggling and or failing out to a Customer Service Representative (CSR). Additional information about why a caller exited the IVR will be provided to CSRs through Genesys Agent Desktop screen-pop.

The project will also implement an integrated disaster recovery and quality assurance testing environment separate from the existing IVR development environment

**Physical Description:**

IVR Self-Service Close Order  
 Automate all or a portion of Close Order task in IVR  
 Usability enhancements to Main Menu, Start/Stop/Close, Assistance Programs & Other Matters Menus  
 Re-organize main menu based on volume selections  
 Add navigation (repeat, previous, main menu) options to each layer of menu  
 Create clear path for Close Order task in Start/Stop/Close menu  
 Usability Enhancements to Authentication Module  
 Streamline authentication module based on main menu selection  
 Enhance the information passed from IVR to GAD screen for CSRs viewing  
 IVR to Provide CSO access phrasing to unauthenticated callers and pass information to CSRs via GAD  
 As additional IVR Tasks are built (ie Close Order, etc) ensure caller goal and associated IVR interaction is passed to CSR via GAD  
 Overall Billing Menu enhancements  
 Integrate Bill Matrix IVR with SCG IVR. Will allow customers to make payment and not be transferred to 3rd party  
 Refine Payment Arrangement Task  
 For customers with pending payment arrangement, play details of task, even if not eligible to change  
 Additional enhancements as continue analysis work

**Project Justification:**

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00774.0  
Category: B. CS - Office Operations  
Category-Sub: 2. Improving Customer Experience  
Workpaper Group: 00774N - PT81424 SCG IVR Ph 4

Audit Services Project No.: 12-323 - SoCalGas Review of Customer Contact Centers Genesys IVR System business control issue #1 identified that a Business Continuity and Disaster Recovery Plan for the IVR system does not exist. The management corrective action included upgrading the IVR from DR Tier 4 to DR Tier 2 and establishing a fully redundant disaster recovery site in Monterey Park.  
After full implementation, annual reduction of \$3.3 million in loaded labor costs by increasing IVR self-service utilization to 35% (based on estimated increase of 3.5% in self service rate).  
Improve Customer Experience Survey scores for calls completed in the IVR.  
Improve call handling efficiency / reduce average handle time (AHT)  
Through implementation of a dedicated quality assurance (QA) technical environment, reduce development cycle time and improve quality of the IVR application  
Address audit issue #1 (please see above) by implementing a fully redundant disaster recovery IVR application instance at Monterey Park.

*Note: Totals may include rounding differences.*



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00774.0  
Category: B. CS - Office Operations  
Category-Sub: 2. Improving Customer Experience  
Workpaper Group: 00774N - PT81424 SCG IVR Ph 4

**Forecast Methodology:**

**Labor - Zero-Based**

The forecast is based upon the current project timeline.

**Non-Labor - Zero-Based**

The forecast is based upon the current project timeline.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00774N**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: B. CS - Office Operations  
 Category-Sub: 2. Improving Customer Experience  
 Workpaper Group: 00774N - PT81424 SCG IVR Ph 4  
 Workpaper Detail: 00774N.001 - SCG IVR Ph 4  
 In-Service Date: 12/31/2014  
 Description:

| Forecast In 2013 \$(000) |              |          |          |  |
|--------------------------|--------------|----------|----------|--|
| Years                    | 2014         | 2015     | 2016     |  |
| Labor                    | 521          | 0        | 0        |  |
| Non-Labor                | 899          | 0        | 0        |  |
| NSE                      | 0            | 0        | 0        |  |
| <b>Total</b>             | <b>1,420</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 5.1          | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: B. CS - Office Operations  
 Category-Sub: 2. Improving Customer Experience  
 Workpaper Group: 00774N - PT81424 SCG IVR Ph 4  
 Workpaper Detail: 00774N.002 - SCG IVR Ph 4  
 In-Service Date: 12/31/2014  
 Description:

| Forecast In 2013 \$(000) |            |          |          |  |
|--------------------------|------------|----------|----------|--|
| Years                    | 2014       | 2015     | 2016     |  |
| Labor                    | 0          | 0        | 0        |  |
| Non-Labor                | 322        | 0        | 0        |  |
| NSE                      | 0          | 0        | 0        |  |
| <b>Total</b>             | <b>322</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 0.0        | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: B. CS - Office Operations  
 Category-Sub: 2. Improving Customer Experience  
 Workpaper Group: 00774N - PT81424 SCG IVR Ph 4  
 Workpaper Detail: 00774N.003 - SCG IVR Ph 4  
 In-Service Date: 03/31/2015  
 Description:

| Forecast In 2013 \$(000) |              |          |            |          |  |
|--------------------------|--------------|----------|------------|----------|--|
| Years                    |              | 2014     | 2015       | 2016     |  |
| Labor                    |              | 0        | 65         | 0        |  |
| Non-Labor                |              | 0        | 86         | 0        |  |
| NSE                      |              | 0        | 0          | 0        |  |
|                          | <b>Total</b> | <b>0</b> | <b>151</b> | <b>0</b> |  |
| FTE                      |              | 0.0      | 0.6        | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00776V - PT81436 SCG My Business Account**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: B. CS - Office Operations  
 Category-Sub: 2. Improving Customer Experience  
 Workpaper Group: 00776V - PT81436 SCG My Business Account

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |              |              |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|--------------|--------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015         | 2016         |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 121               | 157          | 58           |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 1,837             | 1,855        | 1,557        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0            | 0            |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1,958</b>      | <b>2,012</b> | <b>1,615</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 1.2               | 1.5          | 0.6          |

**Business Purpose:**

This business portal is specifically for C&I customers with a focus on meeting the needs of small and medium businesses ("SMBs"). Businesses will be able to view and, manage usage, manage billing and payments, and request services such as routine maintenance for natural gas fired equipment. The business portal will also be used to communicate relevant energy saving tips, as well as information about energy efficiency programs and equipment rebates by providing tailored communications specific to their industry segment, regional location and/or equipment type. Business users will be able to have access to multiple accounts, assign access and restrict access to specific functionality within My Biz Account to different users.

Business Portal launch • Developing phases of online Business MyAccount with awareness campaigns to encourage customer enrollment and usage

Increase operational efficiency by resolving solutions on line such as time for service orders , payment extension, pay by phone and bill inquiries

Electronic/Paperless communication instead of bill inserts

Increased paperless billing adoption. Increase electronic bill payment

**Physical Description:**

Developing phases of online Business MyAccount with awareness campaigns to encourage customer enrollment and usage

Increase operational efficiency by resolving solutions on line such as time for service orders , payment extension, pay by phone and bill inquiries

Electronic/Paperless communication instead of bill inserts

Increased paperless billing adoption. Increase electronic bill payment

**Project Justification:**

(1) Not meeting customer expectations around availability of self-service channel leading to continuing low customer satisfaction scores(JD Power) (2) No touch point with 80% of C&I customers who currently do not have an AE, increasing difficulty new products/services program participation (3) Advanced Meter 1% conservation goal involving C&I customers may not be supported.

Cost savings of \$2.452M (loaded) over 5 years with increasing paperless billing, reducing paper billing postage and handling costs

Increased revenues of \$x.xM due to improvements in Collection Agency Effectiveness rates

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00776.0  
Category: B. CS - Office Operations  
Category-Sub: 2. Improving Customer Experience  
Workpaper Group: 00776V - PT81436 SCG My Business Account

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations..

**Non-Labor - Zero-Based**

Software costs, licensing and maintenace costs.

**NSE - Zero-Based**

N/A



**Beginning of Workpaper Sub Details for  
Workpaper Group 00776V**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: B. CS - Office Operations  
 Category-Sub: 2. Improving Customer Experience  
 Workpaper Group: 00776V - PT81436 SCG My Business Account  
 Workpaper Detail: 00776V.001 - SCG CI My Biz Account  
 In-Service Date: 12/31/2014  
 Description:

| Forecast In 2013 \$(000) |              |          |          |  |
|--------------------------|--------------|----------|----------|--|
| Years                    | 2014         | 2015     | 2016     |  |
| Labor                    | 121          | 0        | 0        |  |
| Non-Labor                | 1,372        | 0        | 0        |  |
| NSE                      | 0            | 0        | 0        |  |
| <b>Total</b>             | <b>1,493</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 1.2          | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: B. CS - Office Operations  
 Category-Sub: 2. Improving Customer Experience  
 Workpaper Group: 00776V - PT81436 SCG My Business Account  
 Workpaper Detail: 00776V.002 - SCG CI My Biz Account  
 In-Service Date: 12/31/2014  
 Description:

| Forecast In 2013 \$(000) |            |          |          |  |
|--------------------------|------------|----------|----------|--|
| Years                    | 2014       | 2015     | 2016     |  |
| Labor                    | 0          | 0        | 0        |  |
| Non-Labor                | 465        | 0        | 0        |  |
| NSE                      | 0          | 0        | 0        |  |
| <b>Total</b>             | <b>465</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 0.0        | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: B. CS - Office Operations  
 Category-Sub: 2. Improving Customer Experience  
 Workpaper Group: 00776V - PT81436 SCG My Business Account  
 Workpaper Detail: 00776V.003 - SCG CI My Biz Account  
 In-Service Date: 12/31/2015  
 Description:

| Forecast In 2013 \$(000) |              |          |              |          |  |
|--------------------------|--------------|----------|--------------|----------|--|
| Years                    |              | 2014     | 2015         | 2016     |  |
| Labor                    |              | 0        | 157          | 0        |  |
| Non-Labor                |              | 0        | 1,855        | 0        |  |
| NSE                      |              | 0        | 0            | 0        |  |
|                          | <b>Total</b> | <b>0</b> | <b>2,012</b> | <b>0</b> |  |
| FTE                      |              | 0.0      | 1.5          | 0.0      |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: B. CS - Office Operations  
 Category-Sub: 2. Improving Customer Experience  
 Workpaper Group: 00776V - PT81436 SCG My Business Account  
 Workpaper Detail: 00776V.004 - SCG CI My Biz Account  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |          |          |              |  |
|--------------------------|----------|----------|--------------|--|
| Years                    | 2014     | 2015     | 2016         |  |
| Labor                    | 0        | 0        | 58           |  |
| Non-Labor                | 0        | 0        | 1,557        |  |
| NSE                      | 0        | 0        | 0            |  |
| <b>Total</b>             | <b>0</b> | <b>0</b> | <b>1,615</b> |  |
| FTE                      | 0.0      | 0.0      | 0.6          |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00784A - PT14826 - Integrated Customer Data & Analytics**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00784.0  
 Category: B. CS - Office Operations  
 Category-Sub: 2. Improving Customer Experience  
 Workpaper Group: 00784A - PT14826 - Integrated Customer Data & Analytics

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |              |            |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|--------------|------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015         | 2016       |
| Years           |            |                   |          |          |          |          |                   |              |            |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 241               | 572          | 7          |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 1,194             | 2,508        | 319        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0            | 0          |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1,435</b>      | <b>3,080</b> | <b>326</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 2.4               | 5.6          | 0.1        |

**Business Purpose:**

ICDA will deliver an integrated data store that enables the future vision of Southern California Gas Company's customer analytics. The analytics solution will accommodate big data volumes generated from self-service transactional data. The integration of this data will provide the ability to analyze customer behavioral data, trends, and preferences during the customer evolution process (starting service, requesting service orders, program participation, remittance processing, transferring service, etc.). By doing so, this will allow SCG to make operational, tactical and strategic decisions more efficiently and timely, by making data promptly accessible and available to SCG's data analysts.

**Physical Description:**

A new data warehouse using the MSSQLServer database platform. Project will utilize the ADRM Utility data model to model meta-data and reporting data for all customer information including (payment history, usage history, facility information, service history, equipment information, program enrollment, self-service history, demographics and psychographic profiles). The project will create new processes that extract, clean, combine and calculate data from the functional systems and populate the new data warehouse. The project will create new ad-hoc reporting database for data analysts and new dashboards for operational monitoring for line and staff managers.

**Project Justification:**

The increasing complexity of the business decisions faced by SoCalGas and our customers creates a corresponding increased need for data to be disseminated into actionable information more widely across to our enterprise, our customers and interested external stakeholders. Without the ability to easily gather, analyze and share customer data, SoCalGas will not be able to see the trends and patterns found in operational data as quickly, which can provide tailored services to individual customers.

The Project will provide the ability to reduce analytics time to insights (and time to business value) by investing in Information Governance and Data Management, Analytics Governance and Advanced Analytics capabilities. Current estimates are 80% of super-user time spent integrating data because of lack of foundational capabilities.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00784.0  
Category: B. CS - Office Operations  
Category-Sub: 2. Improving Customer Experience  
Workpaper Group: 00784A - PT14826 - Integrated Customer Data & Analytics

**Forecast Methodology:**

**Labor - Zero-Based**

The forecast is based upon the current project timeline.

**Non-Labor - Zero-Based**

The forecast is based upon the current project timeline.

**NSE - Zero-Based**

N/A



**Beginning of Workpaper Sub Details for  
Workpaper Group 00784A**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00784.0  
 Category: B. CS - Office Operations  
 Category-Sub: 2. Improving Customer Experience  
 Workpaper Group: 00784A - PT14826 - Integrated Customer Data & Analytics  
 Workpaper Detail: 00784A.001 - Integrated Customer Data & Analytics\_SQL  
 In-Service Date: 03/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |              |            |  |
|--------------------------|--------------|--------------|------------|--|
| Years                    | 2014         | 2015         | 2016       |  |
| Labor                    | 241          | 572          | 7          |  |
| Non-Labor                | 824          | 2,318        | 165        |  |
| NSE                      | 0            | 0            | 0          |  |
| <b>Total</b>             | <b>1,065</b> | <b>2,890</b> | <b>172</b> |  |
| FTE                      | 2.4          | 5.6          | 0.1        |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00784.0  
 Category: B. CS - Office Operations  
 Category-Sub: 2. Improving Customer Experience  
 Workpaper Group: 00784A - PT14826 - Integrated Customer Data & Analytics  
 Workpaper Detail: 00784A.002 - Integrated Customer Data & Analytics\_SQL  
 In-Service Date: 03/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |            |            |  |
|--------------------------|--------------|----------|------------|------------|--|
| Years                    |              | 2014     | 2015       | 2016       |  |
| Labor                    |              | 0        | 0          | 0          |  |
| Non-Labor                |              | 0        | 190        | 154        |  |
| NSE                      |              | 0        | 0          | 0          |  |
|                          | <b>Total</b> | <b>0</b> | <b>190</b> | <b>154</b> |  |
| FTE                      |              | 0.0      | 0.0        | 0.0        |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00784.0  
 Category: B. CS - Office Operations  
 Category-Sub: 2. Improving Customer Experience  
 Workpaper Group: 00784A - PT14826 - Integrated Customer Data & Analytics  
 Workpaper Detail: 00784A.003 - Integrated Customer Data & Analytics\_SQL  
 In-Service Date: 03/31/2016  
 Description:

| Forecast In 2013 \$(000) |            |          |          |  |
|--------------------------|------------|----------|----------|--|
| Years                    | 2014       | 2015     | 2016     |  |
| Labor                    | 0          | 0        | 0        |  |
| Non-Labor                | 370        | 0        | 0        |  |
| NSE                      | 0          | 0        | 0        |  |
| <b>Total</b>             | <b>370</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 0.0        | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00764A - PT14843 Customer Data Control - Phase II**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00764.0  
 Category: B. CS - Office Operations  
 Category-Sub: 3. Mandated  
 Workpaper Group: 00764A - PT14843 Customer Data Control - Phase II

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |              | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |          |
|-----------------|--------------|-------------------|----------|----------|----------|----------|-------------------|------------|----------|
|                 |              | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016     |
|                 | <b>Years</b> |                   |          |          |          |          |                   |            |          |
| Labor           | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 55                | 527        | 0        |
| Non-Labor       | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0        |
| NSE             | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0        |
|                 | <b>Total</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>55</b>         | <b>527</b> | <b>0</b> |
| FTE             | Zero-Based   | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.5               | 5.2        | 0.0      |

**Business Purpose:**

Implement an automated process to purge expired records to stay in compliance with "SoCalGas Customer Data Privacy"  
 Provide audit trail for purged records and generate reports to support audits

**Physical Description:**

Purge Records for MyAccount system and Data Warehouse

**Project Justification:**

Compliance with "SCG Customer Data Privacy" policies and practices  
 Compliance with Sempra Record Retention Policies  
 Avoidance of liability for Theft / Misuse of customer information

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00764.0  
Category: B. CS - Office Operations  
Category-Sub: 3. Mandated  
Workpaper Group: 00764A - PT14843 Customer Data Control - Phase II

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

Based on general HW list price estimates

**Beginning of Workpaper Sub Details for  
Workpaper Group 00764A**



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00764.0  
 Category: B. CS - Office Operations  
 Category-Sub: 3. Mandated  
 Workpaper Group: 00764A - PT14843 Customer Data Control - Phase II  
 Workpaper Detail: 00764A.001 - Customer Data Control Phase II  
 In-Service Date: 08/31/2015  
 Description:

| Forecast In 2013 \$(000) |           |            |          |  |
|--------------------------|-----------|------------|----------|--|
| Years                    | 2014      | 2015       | 2016     |  |
| Labor                    | 55        | 527        | 0        |  |
| Non-Labor                | 0         | 0          | 0        |  |
| NSE                      | 0         | 0          | 0        |  |
| <b>Total</b>             | <b>55</b> | <b>527</b> | <b>0</b> |  |
| FTE                      | 0.5       | 5.2        | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00764D - PT14912 3rd Party Data Request Web Portal**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00764.0  
 Category: B. CS - Office Operations  
 Category-Sub: 3. Mandated  
 Workpaper Group: 00764D - PT14912 3rd Party Data Request Web Portal

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |            |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 282        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 411        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>693</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 2.8        | 0.0      |

**Business Purpose:**

Create Web Portal for 3rd Party Data Request. Will allow a single point of contact for energy usage request data. Data Warehouse will have additional data and cubes put in place so data requests can be fulfilled in the mandated timeframe.

- A single point of contact for energy usage data requests
- Create standard energy usage data access reports in commonly requested formats
- Within 7 business days, respond to requester to let them know the application is being processed and/or notify the requestor of any problems with the application
- Within 30 days, provide the requested data and/or detail why the response was not provided
- Use a standard confidentiality agreement that is consistent across the IOUs
- Create an Energy Usage Data Access Advisory Committee
- The process would not require or authorize an IOU to violate any existing privacy or information security law
- The outputs to the data requests would be in standardized formats
- Standard mechanisms will be used for securely delivering data

**Physical Description:**

3rd Party Data Requestg Web Portal. Additional usage data provided in Data Warehouse for fulfilling data requests.

**Project Justification:**

Regulatory Mandated.

- A single point of contact for energy usage data requests
- Create standard energy usage data access reports in commonly requested formats
- Within 7 business days, respond to requester to let them know the application is being processed and/or notify the requestor of any problems with the application
- Within 30 days, provide the requested data and/or detail why the response was not provided
- Use a standard confidentiality agreement that is consistent across the IOUs
- Create an Energy Usage Data Access Advisory Committee
- The process would not require or authorize an IOU to violate any existing privacy or information security law
- The outputs to the data requests would be in standardized formats
- Standard mechanisms will be used for securely delivering data

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00764.0  
Category: B. CS - Office Operations  
Category-Sub: 3. Mandated  
Workpaper Group: 00764D - PT14912 3rd Party Data Request Web Portal

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00764D**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00764.0  
 Category: B. CS - Office Operations  
 Category-Sub: 3. Mandated  
 Workpaper Group: 00764D - PT14912 3rd Party Data Request Web Portal  
 Workpaper Detail: 00764D.001 - Create Web Portal for 3rd Party Data Request. Will allow a single point of contact for  
 In-Service Date: 09/30/2015  
 Description:

| Forecast In 2013 \$(000) |          |            |          |  |
|--------------------------|----------|------------|----------|--|
| Years                    | 2014     | 2015       | 2016     |  |
| Labor                    | 0        | 282        | 0        |  |
| Non-Labor                | 0        | 411        | 0        |  |
| NSE                      | 0        | 0          | 0        |  |
| <b>Total</b>             | <b>0</b> | <b>693</b> | <b>0</b> |  |
| FTE                      | 0.0      | 2.8        | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00764J - PT81418 Customer Data Controls Phase 1**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00764.0  
 Category: B. CS - Office Operations  
 Category-Sub: 3. Mandated  
 Workpaper Group: 00764J - PT81418 Customer Data Controls Phase 1

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |              | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |          |
|-----------------|--------------|-------------------|----------|----------|----------|----------|-------------------|----------|----------|
|                 |              | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016     |
|                 | <b>Years</b> |                   |          |          |          |          |                   |          |          |
| Labor           | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 956               | 0        | 0        |
| Non-Labor       | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 764               | 0        | 0        |
| NSE             | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0        |
|                 | <b>Total</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1,720</b>      | <b>0</b> | <b>0</b> |
| FTE             | Zero-Based   | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 9.4               | 0.0      | 0.0      |

**Business Purpose:**

Implement protection for sensitive data such as: Social Security Number (SSN), Birth Date, CA Driver's License, Bank Routing & Account Numbers, and Credit Score Information  
 Provide audit trail on accessing the protected data fields and generate reports to support audits  
 Implement an automated process to purge expired CIS records to stay in compliance with "SoCalGas Customer Data Privacy"  
 Provide audit trail for purged records and generate reports to support audits

**Physical Description:**

Audit MCA (Management Corrective Action):  
 Meet "Southern California Gas Company (SCG) Customer Data Privacy" policies and practices. These policies reflect CA State privacy and data security laws and CPUC rules with regards to privacy and security of customer consumption data generated by smart meters.  
 Meet Sempra Record Retention Policies

**Project Justification:**

Compliance with "SCG Customer Data Privacy" policies and practices  
 Compliance with Sempra Record Retention Policies  
 Avoidance of liability for Theft / Misuse of customer information  
 Improvement of CIS Performance due to reduced database table content

*Note: Totals may include rounding differences.*



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00764.0  
Category: B. CS - Office Operations  
Category-Sub: 3. Mandated  
Workpaper Group: 00764J - PT81418 Customer Data Controls Phase 1

**Forecast Methodology:**

**Labor - Zero-Based**

The forecast is based upon the current project timeline.

**Non-Labor - Zero-Based**

The forecast is based upon the current project timeline.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00764J**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00764.0  
 Category: B. CS - Office Operations  
 Category-Sub: 3. Mandated  
 Workpaper Group: 00764J - PT81418 Customer Data Controls Phase 1  
 Workpaper Detail: 00764J.001 - Customer Data Controls  
 In-Service Date: 12/31/2014  
 Description:

| Forecast In 2013 \$(000) |              |          |          |  |
|--------------------------|--------------|----------|----------|--|
| Years                    | 2014         | 2015     | 2016     |  |
| Labor                    | 956          | 0        | 0        |  |
| Non-Labor                | 764          | 0        | 0        |  |
| NSE                      | 0            | 0        | 0        |  |
| <b>Total</b>             | <b>1,720</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 9.4          | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00764B - PT14875 Collections Optimization Phase 2**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00764.0  
 Category: B. CS - Office Operations  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00764B - PT14875 Collections Optimization Phase 2

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |          |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 267               | 0        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 107               | 0        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>374</b>        | <b>0</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 2.6               | 0.0      | 0.0      |

**Business Purpose:**

Implement 3rd Party Collection Middleware to interface with collection agencies.

- Establish Champion/Challenger competition among collection agencies under contract with Company.
- Increase recoveries from collection agencies.
- Increase the scope and accuracy of information available to Company regarding: Company contracted agency activities, performance, and compliance.
- More easily manage and make adjustments to collection agency referral percentages at all levels of the receivable management process (e.g., Primary, Secondary, Tertiary, Bankruptcy, Deceased, etc.).

**Physical Description:**

- Automated interface for all informaton going to and coming from collection agencies.
- Leverage automated calls and/or emails to remind customers that closing bill is due and offer routing to BillMatrix for immediate payment.
- Implement software or 3rd party solution to obtain updated address for customers with closed account to ensure that customer receives their closing bill.

**Project Justification:**

- Increase the scope and accuracy of information available to Company regarding: Company contracted agency activities, performance, and compliance.
- More easily manage and make adjustments to collection agency referral percentages at all levels of the receivable management process (e.g., Primary, Secondary, Tertiary, Bankruptcy, Deceased, etc.).
- Enhance the reporting associated with receivable recoveries to improve Company analytics and net realizable value of receivables, and

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00764.0  
Category: B. CS - Office Operations  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00764B - PT14875 Collections Optimization Phase 2

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00764B**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00764.0  
 Category: B. CS - Office Operations  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00764B - PT14875 Collections Optimization Phase 2  
 Workpaper Detail: 00764B.001 - Implement 3rd Party Collection Middleware to interface with collection agencies.  
 In-Service Date: 10/31/2014  
 Description:

| Forecast In 2013 \$(000) |              |             |             |             |
|--------------------------|--------------|-------------|-------------|-------------|
| Years                    |              | <u>2014</u> | <u>2015</u> | <u>2016</u> |
| Labor                    |              | 267         | 0           | 0           |
| Non-Labor                |              | 107         | 0           | 0           |
| NSE                      |              | 0           | 0           | 0           |
|                          | <b>Total</b> | <b>374</b>  | <b>0</b>    | <b>0</b>    |
| FTE                      |              | 2.6         | 0.0         | 0.0         |

*Note: Totals may include rounding differences.*



**Beginning of Workpaper Group**  
**00764C - PT14877 Collections Optimization Phase 3**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00764.0  
 Category: B. CS - Office Operations  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00764C - PT14877 Collections Optimization Phase 3

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016     |
| Years           |            |                   |          |          |          |          |                   |            |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 282               | 136        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 365               | 121        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>647</b>        | <b>257</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 2.8               | 1.3        | 0.0      |

**Business Purpose:**

Improvements to the back office Duplication Customer Investigation and ID Validation processes have been identified to improve overall collections and bad debt write-offs:

Process/Challenge Questions

- 1) Enhanced ID Validation
- 2) Improved Turn-on Search Customer/Customer Matching Process (revised focus away from exact first and last name match)
- 3) Customer Information System (CIS) weekly Sweep changes (more strict/automated criteria matches, fewer less strict criteria matches entering Duplicate Customer Investigation work queue).
- 4) Duplicate Customer Investigation work queue processing improvements

**Physical Description:**

Residential CSR and Web Turn-ons impacting downstream DCI and ID Validation processes.

**Project Justification:**

Enhanced customer match process to locate potential existing account and bad debt at turn-on, rather than downstream months later in the back office when the customer has both an old and new account with bad debt. CCC turn-on talk time reduction when an existing customer account is located and service is transferred/bad debt is identified, rather than setting up a new account. Reduced backlog of back office DCIs and ID Validations (back office/branch office), including associated labor costs. Reduced bad debt/uncollectible write-offs. Improved customer service/satisfaction by reducing paperwork and manual steps required to start service.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00764.0  
Category: B. CS - Office Operations  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00764C - PT14877 Collections Optimization Phase 3

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00764C**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00764.0  
 Category: B. CS - Office Operations  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00764C - PT14877 Collections Optimization Phase 3  
 Workpaper Detail: 00764C.001 - Phase III  
 In-Service Date: 04/30/2015  
 Description:

| Forecast In 2013 \$(000) |            |            |          |  |
|--------------------------|------------|------------|----------|--|
| Years                    | 2014       | 2015       | 2016     |  |
| Labor                    | 282        | 136        | 0        |  |
| Non-Labor                | 365        | 121        | 0        |  |
| NSE                      | 0          | 0          | 0        |  |
| <b>Total</b>             | <b>647</b> | <b>257</b> | <b>0</b> |  |
| FTE                      | 2.8        | 1.3        | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00764G - PT15878 Collections Optimization Phase 4**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00764.0  
 Category: B. CS - Office Operations  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00764G - PT15878 Collections Optimization Phase 4

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |              | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |              |
|-----------------|--------------|-------------------|----------|----------|----------|----------|-------------------|----------|--------------|
|                 |              | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016         |
|                 | <b>Years</b> |                   |          |          |          |          |                   |          |              |
| Labor           | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 1,067        |
| Non-Labor       | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 2,300        |
| NSE             | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0            |
|                 | <b>Total</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>0</b> | <b>3,367</b> |
| FTE             | Zero-Based   | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.0      | 10.5         |

**Business Purpose:**

Implement external Credit & Collections Module  
 1) Implement Customer Segmentation to determine "Unwilling to Pay", "Late Payers", and "Unable to Pay" customers. Provide ability to optimize priority of orders.  
 2) Use external module to prioritize collect or close orders -- address "Unwilling to Pay" as the highest priority  
 3) Implement External Collection Timeline be able to reduce timeline and provide flexibility

**Physical Description:**

Collect & Close Orders, and the Collections Timeline

**Project Justification:**

Increase effectiveness of collect or close order to change customer behavior. Decrease collect or close orders over time, increase full and partial payments, reduce cash flow, reduce bad debts, reduce collection agency commission fees, and increase net working capital.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00764.0  
Category: B. CS - Office Operations  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00764G - PT15878 Collections Optimization Phase 4

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A



**Beginning of Workpaper Sub Details for  
Workpaper Group 00764G**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00764.0  
 Category: B. CS - Office Operations  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00764G - PT15878 Collections Optimization Phase 4  
 Workpaper Detail: 00764G.001 - Implement external Credit & Collections Module  
 In-Service Date: 12/31/2016  
 Description:

| <b>Forecast In 2013 \$(000)</b> |             |             |              |  |
|---------------------------------|-------------|-------------|--------------|--|
| <b>Years</b>                    | <b>2014</b> | <b>2015</b> | <b>2016</b>  |  |
| Labor                           | 0           | 0           | 1,067        |  |
| Non-Labor                       | 0           | 0           | 2,300        |  |
| NSE                             | 0           | 0           | 0            |  |
| <b>Total</b>                    | <b>0</b>    | <b>0</b>    | <b>3,367</b> |  |
| FTE                             | 0.0         | 0.0         | 10.5         |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00784B - PT81415 Credit & Collections Optimization**  
**Phase 1**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00784.0  
 Category: B. CS - Office Operations  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00784B - PT81415 Credit & Collections Optimization

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |              | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |          |
|-----------------|--------------|-------------------|----------|----------|----------|----------|-------------------|----------|----------|
|                 |              | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016     |
|                 | <b>Years</b> |                   |          |          |          |          |                   |          |          |
| Labor           | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 274               | 0        | 0        |
| Non-Labor       | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 17                | 0        | 0        |
| NSE             | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0        |
|                 | <b>Total</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>291</b>        | <b>0</b> | <b>0</b> |
| FTE             | Zero-Based   | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 2.7               | 0.0      | 0.0      |

**Business Purpose:**

System and process changes including:

Incorporate Late Payment Notice (LPN) into next invoice to reduce operating expenses

Reduce Collection Agency Timeline and improve Outside Collection Agency (OCA) Effectiveness

**Physical Description:**

Regulatory advice filing with CPUC

Approved LPN design for inclusion in invoice

Updated Collections policies and procedures

Training on updated policies and procedures

Refined Collection Agency Management processes and KPIs

**Project Justification:**

Drive cost savings and increase revenue by optimizing Credit & Collections processes and systems to realize \$9.4M in direct (unloaded) benefits between 2013 and 2017, specifically:

Cost savings of \$6.8M by reducing Late Payment Notice postage and handling costs

Increased revenues of \$2.2M due to improvements in Collection Agency Effectiveness rates

Cost avoidance of \$377K by eliminating 13,000+ manual Miscellaneous Money Transfer (MMTs) processed by Mass Markets Credit & Collections (MMCC) each year

Improved Collection Agency Quality/Performance reporting and tracking

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00784.0  
Category: B. CS - Office Operations  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00784B - PT81415 Credit & Collections Optimization

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00784B**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00784.0  
 Category: B. CS - Office Operations  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00784B - PT81415 Credit & Collections Optimization  
 Workpaper Detail: 00784B.001 - Credit & Collections Optimization  
 In-Service Date: 09/30/2014  
 Description:

| Forecast In 2013 \$(000) |              |            |          |          |
|--------------------------|--------------|------------|----------|----------|
| Years                    |              | 2014       | 2015     | 2016     |
| Labor                    |              | 274        | 0        | 0        |
| Non-Labor                |              | 17         | 0        | 0        |
| NSE                      |              | 0          | 0        | 0        |
|                          | <b>Total</b> | <b>291</b> | <b>0</b> | <b>0</b> |
| FTE                      |              | 2.7        | 0.0      | 0.0      |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Category: D. CS- Information  
Workpaper: VARIOUS

**Summary for Category: D. CS- Information**

|              | In 2013\$ (000)   |                   |               |              |
|--------------|-------------------|-------------------|---------------|--------------|
|              | Adjusted-Recorded | Adjusted-Forecast |               |              |
|              | 2013              | 2014              | 2015          | 2016         |
| Labor        | 0                 | 1,454             | 2,375         | 708          |
| Non-Labor    | 0                 | 3,615             | 10,342        | 1,770        |
| NSE          | 0                 | 0                 | 0             | 0            |
| <b>Total</b> | <b>0</b>          | <b>5,069</b>      | <b>12,717</b> | <b>2,478</b> |
| FTE          | 0.0               | 14.7              | 23.2          | 6.9          |

**00774J PT81439 ENVOY & MCS SYBASE DATABASE UPGRADE**

|              |          |              |            |          |
|--------------|----------|--------------|------------|----------|
| Labor        | 0        | 651          | 237        | 0        |
| Non-Labor    | 0        | 1,110        | 700        | 0        |
| NSE          | 0        | 0            | 0          | 0        |
| <b>Total</b> | <b>0</b> | <b>1,761</b> | <b>937</b> | <b>0</b> |
| FTE          | 0.0      | 6.4          | 2.3        | 0.0      |

**00774A PT14803 - Envoy Next Generation**

|              |          |           |              |              |
|--------------|----------|-----------|--------------|--------------|
| Labor        | 0        | 41        | 348          | 464          |
| Non-Labor    | 0        | 0         | 1,700        | 1,200        |
| NSE          | 0        | 0         | 0            | 0            |
| <b>Total</b> | <b>0</b> | <b>41</b> | <b>2,048</b> | <b>1,664</b> |
| FTE          | 0.0      | 0.9       | 3.4          | 4.5          |

**00774C PT14829 - socialgas.com technology upgrade**

|              |          |              |              |          |
|--------------|----------|--------------|--------------|----------|
| Labor        | 0        | 41           | 35           | 0        |
| Non-Labor    | 0        | 1,595        | 1,314        | 0        |
| NSE          | 0        | 0            | 0            | 0        |
| <b>Total</b> | <b>0</b> | <b>1,636</b> | <b>1,349</b> | <b>0</b> |
| FTE          | 0.0      | 0.4          | 0.3          | 0.0      |

**00774G PT14827 C&I Next Generation Phase I**

|              |          |            |              |          |
|--------------|----------|------------|--------------|----------|
| Labor        | 0        | 73         | 201          | 0        |
| Non-Labor    | 0        | 263        | 2,252        | 0        |
| NSE          | 0        | 0          | 0            | 0        |
| <b>Total</b> | <b>0</b> | <b>336</b> | <b>2,453</b> | <b>0</b> |
| FTE          | 0.0      | 0.7        | 2.0          | 0.0      |

**00774I PT15802 C&I Next Generation Phase 2 and 3**

|              |          |          |              |            |
|--------------|----------|----------|--------------|------------|
| Labor        | 0        | 0        | 232          | 232        |
| Non-Labor    | 0        | 0        | 1,510        | 570        |
| NSE          | 0        | 0        | 0            | 0          |
| <b>Total</b> | <b>0</b> | <b>0</b> | <b>1,742</b> | <b>802</b> |
| FTE          | 0.0      | 0.0      | 2.3          | 2.3        |

Note: Totals may include rounding differences.



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Category: D. CS- Information  
Workpaper: VARIOUS

|   | In 2013\$ (000)   |                   |              |           |
|---|-------------------|-------------------|--------------|-----------|
|   | Adjusted-Recorded | Adjusted-Forecast |              |           |
|   | 2013              | 2014              | 2015         | 2016      |
| <b>00754A PT81421 California Producers Envoy</b>  |                   |                   |              |           |
| Labor   | 0                 | 247               | 0            | 0         |
| Non-Labor   | 0                 | 411               | 0            | 0         |
| NSE   | 0                 | 0                 | 0            | 0         |
| <b>Total</b>                                      | <b>0</b>          | <b>658</b>        | <b>0</b>     | <b>0</b>  |
| FTE   | 0.0               | 2.4               | 0.0          | 0.0       |
| <b>00754B Gas and Electric Harmonization</b>      |                   |                   |              |           |
| Labor   | 0                 | 0                 | 391          | 0         |
| Non-Labor   | 0                 | 0                 | 862          | 0         |
| NSE   | 0                 | 0                 | 0            | 0         |
| <b>Total</b>                                      | <b>0</b>          | <b>0</b>          | <b>1,253</b> | <b>0</b>  |
| FTE   | 0.0               | 0.0               | 3.8          | 0.0       |
| <b>00754C Low OFO and EFO</b>                     |                   |                   |              |           |
| Labor   | 0                 | 0                 | 309          | 0         |
| Non-Labor   | 0                 | 0                 | 647          | 0         |
| NSE   | 0                 | 0                 | 0            | 0         |
| <b>Total</b>                                      | <b>0</b>          | <b>0</b>          | <b>956</b>   | <b>0</b>  |
| FTE   | 0.0               | 0.0               | 3.0          | 0.0       |
| <b>00766A PT14869 NAESB EDIX Upgrade</b>          |                   |                   |              |           |
| Labor   | 0                 | 0                 | 262          | 0         |
| Non-Labor   | 0                 | 0                 | 24           | 0         |
| NSE   | 0                 | 0                 | 0            | 0         |
| <b>Total</b>                                      | <b>0</b>          | <b>0</b>          | <b>286</b>   | <b>0</b>  |
| FTE   | 0.0               | 0.0               | 2.6          | 0.0       |
| <b>00774K PT81438 ENVOY MCS DATA CONTROLS</b>     |                   |                   |              |           |
| Labor   | 0                 | 377               | 217          | 12        |
| Non-Labor   | 0                 | 148               | 400          | 0         |
| NSE   | 0                 | 0                 | 0            | 0         |
| <b>Total</b>                                      | <b>0</b>          | <b>525</b>        | <b>617</b>   | <b>12</b> |
| FTE   | 0.0               | 3.7               | 2.1          | 0.1       |
| <b>00774B PT14825 - Email Campaign Management</b> |                   |                   |              |           |
| Labor   | 0                 | 24                | 143          | 0         |
| Non-Labor   | 0                 | 88                | 933          | 0         |
| NSE   | 0                 | 0                 | 0            | 0         |
| <b>Total</b>                                      | <b>0</b>          | <b>112</b>        | <b>1,076</b> | <b>0</b>  |
| FTE   | 0.0               | 0.2               | 1.4          | 0.0       |

Note: Totals may include rounding differences.

**Beginning of Workpaper Group**  
**00774J - PT81439 ENVOY & MCS SYBASE DATABASE UPGRADE**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: D. CS- Information  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00774J - PT81439 ENVOY & MCS SYBASE DATABASE UPGRADE

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |            |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 651               | 237        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 1,110             | 700        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1,761</b>      | <b>937</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 6.4               | 2.3        | 0.0      |

**Business Purpose:**

Project will upgrade legacy Sybase database environment to an enterprise SQL database platform and upgrade MCS application server from HP-UX to Linux, due to software and hardware obsolescence and end-of-life. This solution is the most cost effective replacement system, as it consolidates IT database technologies.

**Physical Description:**

All functional and non functional attributes should be retained. This includes interfaces with other systems, performance of online and batch processes, security requirements and SLA.  
 Remediate Envoy and MCS Applications to work with SQL Server database instead of using Sybase  
 Review and retrofit/replace MCS Application components using Open Server API libraries  
 To move out from the remaining HP-UX, AIX Server & Sybase legacy system and compliant to TRM

**Project Justification:**

Software and hardware have reached end-of-life and obsolescence, and replacement and upgrade system is necessary. This software and hardware vendor replacement choice avoids incurring an additional \$240,000/year software support license cost as compared to the alternative vendor choice.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00774.0  
Category: D. CS- Information  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00774J - PT81439 ENVOY & MCS SYBASE DATABASE UPGRADE

**Forecast Methodology:**

**Labor - Zero-Based**

The forecast is based upon the current project timeline.

**Non-Labor - Zero-Based**

The forecast is based upon the current project timeline.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00774J**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: D. CS- Information  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00774J - PT81439 ENVOY & MCS SYBASE DATABASE UPGRADE  
 Workpaper Detail: 00774J.001 - ENVOY & MCS SYBASE DATABASE UPGRADE  
 In-Service Date: 12/31/2014  
 Description:

| Forecast In 2013 \$(000) |              |              |          |          |  |
|--------------------------|--------------|--------------|----------|----------|--|
| Years                    |              | 2014         | 2015     | 2016     |  |
| Labor                    |              | 651          | 0        | 0        |  |
| Non-Labor                |              | 1,110        | 0        | 0        |  |
| NSE                      |              | 0            | 0        | 0        |  |
|                          | <b>Total</b> | <b>1,761</b> | <b>0</b> | <b>0</b> |  |
| FTE                      |              | 6.4          | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: D. CS- Information  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00774J - PT81439 ENVOY & MCS SYBASE DATABASE UPGRADE  
 Workpaper Detail: 00774J.002 - ENVOY & MCS SYBASE DATABASE UPGRADE  
 In-Service Date: 12/31/2015  
 Description:

| Forecast In 2013 \$(000) |              |          |            |          |  |
|--------------------------|--------------|----------|------------|----------|--|
| Years                    |              | 2014     | 2015       | 2016     |  |
| Labor                    |              | 0        | 237        | 0        |  |
| Non-Labor                |              | 0        | 700        | 0        |  |
| NSE                      |              | 0        | 0          | 0        |  |
|                          | <b>Total</b> | <b>0</b> | <b>937</b> | <b>0</b> |  |
| FTE                      |              | 0.0      | 2.3        | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00774C - PT14829 - socialgas.com technology upgrade**



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: D. CS- Information  
 Category-Sub: 2. Improving Customer Experience  
 Workpaper Group: 00774C - PT14829 - socalgas.com technology upgrade

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |              | Adjusted Recorded |          |          |          |          | Adjusted Forecast |              |          |
|-----------------|--------------|-------------------|----------|----------|----------|----------|-------------------|--------------|----------|
|                 |              | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015         | 2016     |
|                 | <b>Years</b> |                   |          |          |          |          |                   |              |          |
| Labor           | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 41                | 35           | 0        |
| Non-Labor       | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 1,595             | 1,314        | 0        |
| NSE             | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 0            | 0        |
|                 | <b>Total</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1,636</b>      | <b>1,349</b> | <b>0</b> |
| FTE             | Zero-Based   | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.4               | 0.3          | 0.0      |

**Business Purpose:**

Project will replace aging and un-supported TeamSite content management system used for socalgas.com and other micro-sites shown at socalgas.com.

**Physical Description:**

Project will replace TeamSite content management system with Oracle Sites. Project will create automation to migrate content from old platform to new platform. Project will create responsive design software to render socalgas.com pages in desktop, tablet and mobile device sizes, depending on the device

**Project Justification:**

Project will provide;

1. Quicker turn around on website updates or additions
2. Provides content owners with the ability to update socalgas.com and not rely on web team for updates
3. Responsive design will give customers complete access to SoCalGas programs and services regardless of the device used

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00774.0  
Category: D. CS- Information  
Category-Sub: 2. Improving Customer Experience  
Workpaper Group: 00774C - PT14829 - socialgas.com technology upgrade

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00774C**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: D. CS- Information  
 Category-Sub: 2. Improving Customer Experience  
 Workpaper Group: 00774C - PT14829 - socialgas.com technology upgrade  
 Workpaper Detail: 00774C.001 - socialgas.com upgrade  
 In-Service Date: 12/31/2015  
 Description:

| Forecast In 2013 \$(000) |              |              |          |  |
|--------------------------|--------------|--------------|----------|--|
| Years                    | 2014         | 2015         | 2016     |  |
| Labor                    | 41           | 35           | 0        |  |
| Non-Labor                | 1,595        | 1,314        | 0        |  |
| NSE                      | 0            | 0            | 0        |  |
| <b>Total</b>             | <b>1,636</b> | <b>1,349</b> | <b>0</b> |  |
| FTE                      | 0.4          | 0.3          | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00774G - PT14827 C&I Next Generation Phase I**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: D. CS- Information  
 Category-Sub: 2. Improving Customer Experience  
 Workpaper Group: 00774G - PT14827 C&I Next Generation Phase I

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |              |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|--------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015         | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |              |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 73                | 201          | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 263               | 2,252        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0            | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>336</b>        | <b>2,453</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.7               | 2.0          | 0.0      |

**Business Purpose:**

This pilot is to provide field representatives, beginning with Account Executive (Account Representatives), with a mobile enablement tool to increase the effectiveness of customer transactions in face-to-face meetings and site visits.

**Physical Description:**

Create a mobile accessible application to aggregate various enterprise databases and contain robust data retrieval and reporting abilities. This will equip Account Representatives with light, portable devices, that can wirelessly connect to company information systems and websites, and include functionalities such as: mapping, auditing, reporting, tracking, contracting, and program enrollment applications.

**Project Justification:**

This will introduce new mobile technology to Account Representatives to increase effectiveness of customer interactions, driving higher rates of engagement in various programs and services. This will also improve current documentation and information verification processes through data input process standardization.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00774.0  
Category: D. CS- Information  
Category-Sub: 2. Improving Customer Experience  
Workpaper Group: 00774G - PT14827 C&I Next Generation Phase I

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00774G**



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: D. CS- Information  
 Category-Sub: 2. Improving Customer Experience  
 Workpaper Group: 00774G - PT14827 C&I Next Generation Phase I  
 Workpaper Detail: 00774G.001 - C&I Next Generation  
 In-Service Date: 12/31/2015  
 Description:

| Forecast In 2013 \$(000) |            |              |          |  |
|--------------------------|------------|--------------|----------|--|
| Years                    | 2014       | 2015         | 2016     |  |
| Labor                    | 73         | 201          | 0        |  |
| Non-Labor                | 263        | 2,252        | 0        |  |
| NSE                      | 0          | 0            | 0        |  |
| <b>Total</b>             | <b>336</b> | <b>2,453</b> | <b>0</b> |  |
| FTE                      | 0.7        | 2.0          | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00774I - PT15802 C&I Next Generation Phase 2 and 3**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: D. CS- Information  
 Category-Sub: 2. Improving Customer Experience  
 Workpaper Group: 00774I - PT15802 C&I Next Generation Phase 2 and 3

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |              |            |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|--------------|------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015         | 2016       |
| Years           |            |                   |          |          |          |          |                   |              |            |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 232          | 232        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 1,510        | 570        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0            | 0          |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>1,742</b> | <b>802</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 2.3          | 2.3        |

**Business Purpose:**

This pilot is to provide field representatives, beginning with Account Executive (Account Representatives), with a mobile enablement tool to increase the effectiveness of customer transactions in face-to-face meetings and site visits.

**Physical Description:**

Create a mobile accessible application to aggregate various enterprise databases and contain robust data retrieval and reporting abilities. This will equip Account Representatives with light, portable devices, that can wirelessly connect to company information systems and websites, and include functionalities such as: mapping, auditing, reporting, tracking, contracting, and program enrollment applications.

**Project Justification:**

This will introduce new mobile technology to Account Representatives to increase effectiveness of customer interactions, driving higher rates of engagement in various programs and services. This will also improve current documentation and information verification processes through data input process standardization.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00774.0  
Category: D. CS- Information  
Category-Sub: 2. Improving Customer Experience  
Workpaper Group: 00774I - PT15802 C&I Next Generation Phase 2 and 3

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00774I**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: D. CS- Information  
 Category-Sub: 2. Improving Customer Experience  
 Workpaper Group: 00774I - PT15802 C&I Next Generation Phase 2 and 3  
 Workpaper Detail: 00774I.001 - Account Executives require wireless access to customer and program information at all t  
 In-Service Date: 12/31/2015  
 Description:

| Forecast In 2013 \$(000) |              |          |              |          |  |
|--------------------------|--------------|----------|--------------|----------|--|
| Years                    |              | 2014     | 2015         | 2016     |  |
| Labor                    |              | 0        | 232          | 0        |  |
| Non-Labor                |              | 0        | 1,510        | 0        |  |
| NSE                      |              | 0        | 0            | 0        |  |
|                          | <b>Total</b> | <b>0</b> | <b>1,742</b> | <b>0</b> |  |
| FTE                      |              | 0.0      | 2.3          | 0.0      |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: D. CS- Information  
 Category-Sub: 2. Improving Customer Experience  
 Workpaper Group: 00774I - PT15802 C&I Next Generation Phase 2 and 3  
 Workpaper Detail: 00774I.002 - Account Executives require wireless access to customer and program information at all t  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |          |            |  |
|--------------------------|--------------|----------|----------|------------|--|
| Years                    |              | 2014     | 2015     | 2016       |  |
| Labor                    |              | 0        | 0        | 232        |  |
| Non-Labor                |              | 0        | 0        | 570        |  |
| NSE                      |              | 0        | 0        | 0          |  |
|                          | <b>Total</b> | <b>0</b> | <b>0</b> | <b>802</b> |  |
| FTE                      |              | 0.0      | 0.0      | 2.3        |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00754A - PT81421 California Producers Envoy**



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00754.0  
 Category: D. CS- Information  
 Category-Sub: 3. Mandated  
 Workpaper Group: 00754A - PT81421 California Producers Envoy

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |              | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |          |
|-----------------|--------------|-------------------|----------|----------|----------|----------|-------------------|----------|----------|
|                 |              | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016     |
|                 | <b>Years</b> |                   |          |          |          |          |                   |          |          |
| Labor           | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 247               | 0        | 0        |
| Non-Labor       | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 411               | 0        | 0        |
| NSE             | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0        |
|                 | <b>Total</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>658</b>        | <b>0</b> | <b>0</b> |
| FTE             | Zero-Based   | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 2.4               | 0.0      | 0.0      |

**Business Purpose:**

For compliance with D.07-08-029 and D.10-09-001, California producer Access Decisions.

**Physical Description:**

Enhance Envoy system to support the new business requirements for California Producers  
 Enhance SCBS system to support new billing process for California Producers.  
 Continue to meet existing Envoy and SCBS SLA.

**Project Justification:**

Enhance ENVOY to track and allow trading of California Producer (CA Producers) imbalances. These include  
 Rules for calculating Tolerance Bands  
 Balancing on Operational Flow Order (OFO ) and Non-OFO days  
 Provide calculation of cash-outs for uncorrected imbalances and trueing up estimated data  
 Provide necessary CA Producer measurement data, including split meter data  
 Support two separate sets of measurements - one for the existing CA Producer contracts and one for the new CA Producer contracts until all existing contracts are terminated and replaced by new ones.  
 Enhance the Specialized Customer Billing System (SCBS) pre-billing process.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00754.0  
Category: D. CS- Information  
Category-Sub: 3. Mandated  
Workpaper Group: 00754A - PT81421 California Producers Envoy

**Forecast Methodology:**

**Labor - Zero-Based**

The forecast is based upon the current project timeline.

**Non-Labor - Zero-Based**

The forecast is based upon the current project timeline.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00754A**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00754.0  
 Category: D. CS- Information  
 Category-Sub: 3. Mandated  
 Workpaper Group: 00754A - PT81421 California Producers Envoy  
 Workpaper Detail: 00754A.001 - California Producers Envoy  
 In-Service Date: 12/31/2014  
 Description:

| <b>Forecast In 2013 \$(000)</b> |             |             |             |  |
|---------------------------------|-------------|-------------|-------------|--|
| <b>Years</b>                    | <b>2014</b> | <b>2015</b> | <b>2016</b> |  |
| Labor                           | 247         | 0           | 0           |  |
| Non-Labor                       | 411         | 0           | 0           |  |
| NSE                             | 0           | 0           | 0           |  |
| <b>Total</b>                    | <b>658</b>  | <b>0</b>    | <b>0</b>    |  |
| FTE                             | 2.4         | 0.0         | 0.0         |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00754B - Gas and Electric Harmonization**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00754.0  
 Category: D. CS- Information  
 Category-Sub: 3. Mandated  
 Workpaper Group: 00754B - Gas and Electric Harmonization

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |              |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|--------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015         | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |              |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 391          | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 862          | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0            | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>1,253</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 3.8          | 0.0      |

**Business Purpose:**

Support compliance with FERC rule making decision for gas and electric harmonization proposal.

**Physical Description:**

Major system enhancements are required in ENVOY application to maintain coordination with upstream pipelines to maximize natural gas receipts and customer satisfaction as we move to implement a 2 :00 a.m. gas day and 3 intraday cycles.

**Project Justification:**

These are necessary system changes to meet new mandated FERC requirements.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00754.0  
Category: D. CS- Information  
Category-Sub: 3. Mandated  
Workpaper Group: 00754B - Gas and Electric Harmonization

**Forecast Methodology:**

**Labor - Zero-Based**

Upgrade and enhance current Envoy application with in house development.  
The project start date and end dates are not considering any other capital projects that are in progress at the same time. Impact analysis will need to perform during the Business Case phase to adjust timeline accordingly.

**Non-Labor - Zero-Based**

Upgrade and enhance current Envoy application with in house development.  
The project start date and end dates are not considering any other capital projects that are in progress at the same time. Impact analysis will need to perform during the Business Case phase to adjust timeline accordingly.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00754B**



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00754.0  
 Category: D. CS- Information  
 Category-Sub: 3. Mandated  
 Workpaper Group: 00754B - Gas and Electric Harmonization  
 Workpaper Detail: 00754B.001 - Gas and Electric Harmonization  
 In-Service Date: 12/31/2015  
 Description:

| Forecast In 2013 \$(000) |              |          |              |          |  |
|--------------------------|--------------|----------|--------------|----------|--|
| Years                    |              | 2014     | 2015         | 2016     |  |
| Labor                    |              | 0        | 391          | 0        |  |
| Non-Labor                |              | 0        | 862          | 0        |  |
| NSE                      |              | 0        | 0            | 0        |  |
|                          | <b>Total</b> | <b>0</b> | <b>1,253</b> | <b>0</b> |  |
| FTE                      |              | 0.0      | 3.8          | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00754C - Low OFO and EFO**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00754.0  
 Category: D. CS- Information  
 Category-Sub: 3. Mandated  
 Workpaper Group: 00754C - Low OFO and EFO

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016     |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 309        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 647        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>956</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 3.0        | 0.0      |

**Business Purpose:**

Support compliance with CPUC decisions for changes to Rule 30, Rule 41, and G-IMB tariff. Major system enhancements are required in ENVOY and SCBS applications to support Low Operational Flow Order (Low OFO) and Emergency Flow Orders (EFO).

**Physical Description:**

Eliminate winter balancing events and replace with low operational flow orders (Low OFO) and Emergency Flow Orders (EFO)

**Project Justification:**

These are necessary system changes for compliance with CPUC decision.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00754.0  
Category: D. CS- Information  
Category-Sub: 3. Mandated  
Workpaper Group: 00754C - Low OFO and EFO

**Forecast Methodology:**

**Labor - Zero-Based**

Upgrade and enhance current Envoy and SCBS applications with in house development.  
The project start date and end dates are not considering any other capital projects that are in progress at the same time. Impact analysis will need to perform during the Business Case phase to adjust timeline accordingly.

**Non-Labor - Zero-Based**

Upgrade and enhance current Envoy and SCBS applications with in house development.  
The project start date and end dates are not considering any other capital projects that are in progress at the same time. Impact analysis will need to perform during the Business Case phase to adjust timeline accordingly.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00754C**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00754.0  
 Category: D. CS- Information  
 Category-Sub: 3. Mandated  
 Workpaper Group: 00754C - Low OFO and EFO  
 Workpaper Detail: 00754C.001 - Low OFO and EFO  
 In-Service Date: 12/31/2015  
 Description:

| Forecast In 2013 \$(000) |          |            |          |  |
|--------------------------|----------|------------|----------|--|
| Years                    | 2014     | 2015       | 2016     |  |
| Labor                    | 0        | 309        | 0        |  |
| Non-Labor                | 0        | 647        | 0        |  |
| NSE                      | 0        | 0          | 0        |  |
| <b>Total</b>             | <b>0</b> | <b>956</b> | <b>0</b> |  |
| FTE                      | 0.0      | 3.0        | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00766A - PT14869 NAESB EDIX Upgrade**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00766.0  
 Category: D. CS- Information  
 Category-Sub: 3. Mandated  
 Workpaper Group: 00766A - PT14869 NAESB EDIX Upgrade

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |              | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |          |
|-----------------|--------------|-------------------|----------|----------|----------|----------|-------------------|------------|----------|
|                 |              | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016     |
|                 | <b>Years</b> |                   |          |          |          |          |                   |            |          |
| Labor           | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 262        | 0        |
| Non-Labor       | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 24         | 0        |
| NSE             | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0        |
|                 | <b>Total</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>286</b> | <b>0</b> |
| FTE             | Zero-Based   | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 2.6        | 0.0      |

**Business Purpose:**

SoCalGas has Trading Partner agreements with 6 interstate pipelines for gas flow information in order to facilitate the transportation of gas. EDIX supports our file transfers with these interstate pipelines using the NAESB (North American Energy Standard Board) version 1.6, which is becoming obsolete.

Kinder Morgan, a parent company for El Paso and Mojave is requesting SCG to implement NAESB version 2.0. by 1st quarter 2015. Other Pipelines are also planning for the upgrade between 2014 to 2015. SoCalGas must update our EDI X12 transaction sets to NAESB Version 2.0 to avoid service interruption and impact customers' satisfaction.

**Physical Description:**

Upgrade NAESB version to 2.0 to meet NAESB standard and be able to continue file data transfers with our interstate pipeline companies.

**Project Justification:**

- maintain ability to continue conducting business with interstate pipelines which is critical for gas deliveries
- avoid manual effort (one FTE)
- optimize customer experience as a reliable service provider

*Note: Totals may include rounding differences.*



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00766.0  
Category: D. CS- Information  
Category-Sub: 3. Mandated  
Workpaper Group: 00766A - PT14869 NAESB EDIX Upgrade

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00766A**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00766.0  
 Category: D. CS- Information  
 Category-Sub: 3. Mandated  
 Workpaper Group: 00766A - PT14869 NAESB EDIX Upgrade  
 Workpaper Detail: 00766A.001 - SoCalGas has Trading Partner agreements with 6 interstate pipelines for gas flow inform  
 In-Service Date: 06/30/2015  
 Description:

| Forecast In 2013 \$(000) |              |          |            |          |  |
|--------------------------|--------------|----------|------------|----------|--|
| Years                    |              | 2014     | 2015       | 2016     |  |
| Labor                    |              | 0        | 262        | 0        |  |
| Non-Labor                |              | 0        | 24         | 0        |  |
| NSE                      |              | 0        | 0          | 0        |  |
|                          | <b>Total</b> | <b>0</b> | <b>286</b> | <b>0</b> |  |
| FTE                      |              | 0.0      | 2.6        | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00774K - PT81438 ENVOY MCS DATA CONTROLS**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: D. CS- Information  
 Category-Sub: 3. Mandated  
 Workpaper Group: 00774K - PT81438 ENVOY MCS DATA CONTROLS

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |           |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|-----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016      |
| <b>Years</b>    |            |                   |          |          |          |          |                   |            |           |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 377               | 217        | 12        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 148               | 400        | 0         |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0         |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>525</b>        | <b>617</b> | <b>12</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 3.7               | 2.1        | 0.1       |

**Business Purpose:**

Implement a set of automated processes to purge expired Envoy and MCS data on an on-going basis to stay in compliance with the guidelines and policies.

**Physical Description:**

Need an automated process to purge data older than the data retention period  
 Retention period should be configurable based on data type (Customers, Measurements etc.) without program changes  
 Need a review and approval process before any data is purged in Envoy  
 Enhance the current review and approval process in MCS if needed  
 Purge should not impact any business functions

**Project Justification:**

ENVOY and MCS are required to be in compliance with CPUC restrictions on data retention, audit guidelines, and Sempra Record Management Policies through disposal of historical data.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00774.0  
Category: D. CS- Information  
Category-Sub: 3. Mandated  
Workpaper Group: 00774K - PT81438 ENVOY MCS DATA CONTROLS

**Forecast Methodology:**

**Labor - Zero-Based**

The forecast is based upon the current project timeline.

**Non-Labor - Zero-Based**

The forecast is based upon the current project timeline.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00774K**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: D. CS- Information  
 Category-Sub: 3. Mandated  
 Workpaper Group: 00774K - PT81438 ENVOY MCS DATA CONTROLS  
 Workpaper Detail: 00774K.001 - ENVOY MCS DATA CONTROLS  
 In-Service Date: 12/31/2014  
 Description:

| Forecast In 2013 \$(000) |            |          |          |  |
|--------------------------|------------|----------|----------|--|
| Years                    | 2014       | 2015     | 2016     |  |
| Labor                    | 377        | 0        | 0        |  |
| Non-Labor                | 108        | 0        | 0        |  |
| NSE                      | 0          | 0        | 0        |  |
| <b>Total</b>             | <b>485</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 3.7        | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: D. CS- Information  
 Category-Sub: 3. Mandated  
 Workpaper Group: 00774K - PT81438 ENVOY MCS DATA CONTROLS  
 Workpaper Detail: 00774K.002 - ENVOY MCS DATA CONTROLS  
 In-Service Date: 12/31/2014  
 Description:

| Forecast In 2013 \$(000) |           |          |          |  |
|--------------------------|-----------|----------|----------|--|
| Years                    | 2014      | 2015     | 2016     |  |
| Labor                    | 0         | 0        | 0        |  |
| Non-Labor                | 40        | 0        | 0        |  |
| NSE                      | 0         | 0        | 0        |  |
| <b>Total</b>             | <b>40</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 0.0       | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: D. CS- Information  
 Category-Sub: 3. Mandated  
 Workpaper Group: 00774K - PT81438 ENVOY MCS DATA CONTROLS  
 Workpaper Detail: 00774K.003 - ENVOY MCS DATA CONTROLS  
 In-Service Date: 01/31/2016  
 Description:

| Forecast In 2013 \$(000) |          |            |           |  |
|--------------------------|----------|------------|-----------|--|
| Years                    | 2014     | 2015       | 2016      |  |
| Labor                    | 0        | 217        | 12        |  |
| Non-Labor                | 0        | 400        | 0         |  |
| NSE                      | 0        | 0          | 0         |  |
| <b>Total</b>             | <b>0</b> | <b>617</b> | <b>12</b> |  |
| FTE                      | 0.0      | 2.1        | 0.1       |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00774B - PT14825 - Email Campaign Management**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: D. CS- Information  
 Category-Sub: 6. Understanding Customers  
 Workpaper Group: 00774B - PT14825 - Email Campaign Management

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |              |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|--------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015         | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |              |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 24                | 143          | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 88                | 933          | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0            | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>112</b>        | <b>1,076</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.2               | 1.4          | 0.0      |

**Business Purpose:**

Project will provide tools to create, administer, and track emails and other campaigns to measure their effectiveness and efficiency.

**Physical Description:**

1. Provide tools for creating campaigns - by entering campaign information, applying filters to select customer segments , define deployment date and retrieve data from CIS for running campaign.
2. Integrate with internal and external email services (including iContact and vendors such as SilverPop) to send emails to customers
3. Reporting to track campaigns and their benefits/performance

**Project Justification:**

Increased use of email communications requires a campaign management system to control costs in generating new communication campaigns and ensure effectiveness of email campaigns.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00774.0  
Category: D. CS- Information  
Category-Sub: 6. Understanding Customers  
Workpaper Group: 00774B - PT14825 - Email Campaign Management

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00774B**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: D. CS- Information  
 Category-Sub: 6. Understanding Customers  
 Workpaper Group: 00774B - PT14825 - Email Campaign Management  
 Workpaper Detail: 00774B.001 - Project will provide tools to create administer and track emails and other campaigns  
 In-Service Date: 06/30/2015  
 Description:

| Forecast In 2013 \$(000) |          |           |          |  |
|--------------------------|----------|-----------|----------|--|
| Years                    | 2014     | 2015      | 2016     |  |
| Labor                    | 0        | 0         | 0        |  |
| Non-Labor                | 0        | 75        | 0        |  |
| NSE                      | 0        | 0         | 0        |  |
| <b>Total</b>             | <b>0</b> | <b>75</b> | <b>0</b> |  |
| FTE                      | 0.0      | 0.0       | 0.0      |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: D. CS- Information  
 Category-Sub: 6. Understanding Customers  
 Workpaper Group: 00774B - PT14825 - Email Campaign Management  
 Workpaper Detail: 00774B.002 - Project will provide tools to create administer and track emails and other campaigns  
 In-Service Date: 06/30/2015  
 Description:

| Forecast In 2013 \$(000) |          |            |          |  |
|--------------------------|----------|------------|----------|--|
| Years                    | 2014     | 2015       | 2016     |  |
| Labor                    | 0        | 0          | 0        |  |
| Non-Labor                | 0        | 200        | 0        |  |
| NSE                      | 0        | 0          | 0        |  |
| <b>Total</b>             | <b>0</b> | <b>200</b> | <b>0</b> |  |
| FTE                      | 0.0      | 0.0        | 0.0      |  |

*Note: Totals may include rounding differences.*



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: D. CS- Information  
 Category-Sub: 6. Understanding Customers  
 Workpaper Group: 00774B - PT14825 - Email Campaign Management  
 Workpaper Detail: 00774B.003 - Project will provide tools to create administer and track emails and other campaigns  
 In-Service Date: 06/30/2015  
 Description:

| Forecast In 2013 \$(000) |            |            |          |  |
|--------------------------|------------|------------|----------|--|
| Years                    | 2014       | 2015       | 2016     |  |
| Labor                    | 24         | 143        | 0        |  |
| Non-Labor                | 88         | 658        | 0        |  |
| NSE                      | 0          | 0          | 0        |  |
| <b>Total</b>             | <b>112</b> | <b>801</b> | <b>0</b> |  |
| FTE                      | 0.2        | 1.4        | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00774A - PT14803 - Envoy Next Generation**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: D. CS- Information  
 Category-Sub: 10. Growth/Capacity  
 Workpaper Group: 00774A - PT14803 - Envoy Next Generation

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |              |              |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|--------------|--------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015         | 2016         |
| <b>Years</b>    |            |                   |          |          |          |          |                   |              |              |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 41                | 348          | 464          |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 1,700        | 1,200        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0            | 0            |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>41</b>         | <b>2,048</b> | <b>1,664</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.9               | 3.4          | 4.5          |

**Business Purpose:**

Envoy is currently on IE 6 (Internet Explorer 6) which is an obsolete platform. This project will upgrade Envoy to current technology platform. Envoy public website will be upgraded to meet mandatory accessibility requirements. Envoy GUI will be redesigned. Selected Envoy services will be implemented on mobile devices. Business identified functional improvements will be implemented. Security risk Cross Site Reference Forgery (CSRF) will be remediated.

**Physical Description:**

- Project will upgrade Envoy from IE 6 to industry standard browser or browser independent platform to facilitate customer interaction.
- Redesign the Envoy public website for mandatory accessibility compliance (§4.3 of the MOU with the Disability Rights Advocates signed and agreed to during the 2008 GRC).
- Implement selected Envoy services to external customers via mobile device platform(s) including purchase capacity, nominations, meter usage and admin functions.
- GUI redesign and help screens
- Functional improvements in Envoy for gas transportation services.
- Cross Site Reference Forgery (CSRF) remediation.

**Project Justification:**

- Upgrade Envoy out of obsolete IE6 browser to avoid potential disruption of Envoy services to SoCalGas gas suppliers and customers
- Regulatory compliance with accessibility requirements
- Provide mobile channel for customers as identified in customer satisfaction survey
- Improve usability with GUI redesign and functional improvements as identified in customer satisfaction survey

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00774.0  
Category: D. CS- Information  
Category-Sub: 10. Growth/Capacity  
Workpaper Group: 00774A - PT14803 - Envoy Next Generation

**Forecast Methodology:**

**Labor - Zero-Based**

The forecast is based upon the current project timeline.

**Non-Labor - Zero-Based**

The forecast is based upon the current project timeline.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00774A**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: D. CS- Information  
 Category-Sub: 10. Growth/Capacity  
 Workpaper Group: 00774A - PT14803 - Envoy Next Generation  
 Workpaper Detail: 00774A.001 - Envoy is currently on IE 6 (Internet Explorer 6) which is an obsolete platform. This p  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |           |              |              |  |
|--------------------------|-----------|--------------|--------------|--|
| Years                    | 2014      | 2015         | 2016         |  |
| Labor                    | 41        | 348          | 464          |  |
| Non-Labor                | 0         | 1,700        | 1,200        |  |
| NSE                      | 0         | 0            | 0            |  |
| <b>Total</b>             | <b>41</b> | <b>2,048</b> | <b>1,664</b> |  |
| FTE                      | 0.9       | 3.4          | 4.5          |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Category: E. Engineering & ES  
Workpaper: VARIOUS

**Summary for Category: E. Engineering & ES**

|              | In 2013\$ (000)   |                   |              |              |
|--------------|-------------------|-------------------|--------------|--------------|
|              | Adjusted-Recorded | Adjusted-Forecast |              |              |
|              | 2013              | 2014              | 2015         | 2016         |
| Labor        | 0                 | 778               | 677          | 976          |
| Non-Labor    | 0                 | 1,453             | 3,962        | 7,917        |
| NSE          | 0                 | 0                 | 0            | 0            |
| <b>Total</b> | <b>0</b>          | <b>2,231</b>      | <b>4,639</b> | <b>8,893</b> |
| FTE          | 0.0               | 7.6               | 6.6          | 9.5          |

**00776R PT81419 PDA Meter Test Lab**

|              |          |            |          |          |
|--------------|----------|------------|----------|----------|
| Labor        | 0        | 256        | 0        | 0        |
| Non-Labor    | 0        | 321        | 0        | 0        |
| NSE          | 0        | 0          | 0        | 0        |
| <b>Total</b> | <b>0</b> | <b>577</b> | <b>0</b> | <b>0</b> |
| FTE          | 0.0      | 2.5        | 0.0      | 0.0      |

**00776AA PT16860 GIS Gas Enhancements 2016**

|              |          |          |          |              |
|--------------|----------|----------|----------|--------------|
| Labor        | 0        | 0        | 0        | 800          |
| Non-Labor    | 0        | 0        | 0        | 6,577        |
| NSE          | 0        | 0        | 0        | 0            |
| <b>Total</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>7,377</b> |
| FTE          | 0.0      | 0.0      | 0.0      | 7.8          |

**00776E PT14924 Enterprise GIS Uplift**

|              |          |          |              |            |
|--------------|----------|----------|--------------|------------|
| Labor        | 0        | 0        | 143          | 43         |
| Non-Labor    | 0        | 0        | 1,152        | 370        |
| NSE          | 0        | 0        | 0            | 0          |
| <b>Total</b> | <b>0</b> | <b>0</b> | <b>1,295</b> | <b>413</b> |
| FTE          | 0.0      | 0.0      | 1.4          | 0.4        |

**00776P PT81412 GAS GIS Enhancements 2013**

|              |          |              |          |          |
|--------------|----------|--------------|----------|----------|
| Labor        | 0        | 122          | 0        | 0        |
| Non-Labor    | 0        | 1,032        | 0        | 0        |
| NSE          | 0        | 0            | 0        | 0        |
| <b>Total</b> | <b>0</b> | <b>1,154</b> | <b>0</b> | <b>0</b> |
| FTE          | 0.0      | 1.2          | 0.0      | 0.0      |

**00776Y PT81461 Gas GIS Project 2014**

|              |          |            |            |          |
|--------------|----------|------------|------------|----------|
| Labor        | 0        | 400        | 133        | 0        |
| Non-Labor    | 0        | 100        | 100        | 0        |
| NSE          | 0        | 0          | 0          | 0        |
| <b>Total</b> | <b>0</b> | <b>500</b> | <b>233</b> | <b>0</b> |
| FTE          | 0.0      | 3.9        | 1.3        | 0.0      |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Category: E. Engineering & ES  
 Workpaper: VARIOUS

| In 2013\$ (000)   |                   |      |      |
|-------------------|-------------------|------|------|
| Adjusted-Recorded | Adjusted-Forecast |      |      |
| 2013              | 2014              | 2015 | 2016 |

**00776Z PT15859 GIS Gas Enhancements 2015**

|              |          |          |              |              |
|--------------|----------|----------|--------------|--------------|
| Labor        | 0        | 0        | 401          | 133          |
| Non-Labor    | 0        | 0        | 2,710        | 970          |
| NSE          | 0        | 0        | 0            | 0            |
| <b>Total</b> | <b>0</b> | <b>0</b> | <b>3,111</b> | <b>1,103</b> |
| FTE          | 0.0      | 0.0      | 3.9          | 1.3          |

*Note: Totals may include rounding differences.*



**Beginning of Workpaper Group**  
**00776R - PT81419 PDA Meter Test Lab**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: E. Engineering & ES  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00776R - PT81419 PDA Meter Test Lab

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016     |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 256               | 0        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 321               | 0        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>577</b>        | <b>0</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 2.5               | 0.0      | 0.0      |

**Business Purpose:**

The testing of Gas Meters is mandated and regulated by the California Public Utility Commissioner under General Order 58A. If the test Provers becomes nonoperational or cannot provide accurate test results:  
 Fines could be imposed for not being in compliance.  
 Possible revocation of our Meter Performance Control Program. This program is worth \$25 million per year in avoided capital replacement via meter life extension.  
 Inaccurate test results could cause meter families to be removed and replaced in error which in return could require any meter over 10 years in service to be retested/replaced, roughly 5 million meters.

**Physical Description:**

The PDA Meter Test Lab located at Pico Rivera processes all Gas meter inspections for SDG&E and SCG which includes new vendor shipments and field return meters; also included are the SDG&E Smart Meters and SCG Advanced Meters. The meter accuracy test equipment (Provers) used for testing is controlled by technology that is antiquated and difficult to support. Technology issues include:  
 The use of 80386 personal computers within the Provers. The 80386 PCs have been in use in the lab since the early 1990's. The hardware components for the 80386's are limited and are currently being maintained using parts from spare 80386's within the lab. Only one lab technician is capable of providing support due to the complexity of the technology. The legacy PDA reporting applications. Current version is not Windows 7 compatible. Applications were developed in PowerBuilder version 8, a language that limits support by the IT Shared Application department. Version 8 is no longer supported by Sybase; current version of PowerBuilder is version 12.  
 Serial cable used to connect the hardware limits communication with newer technology, along with limited support by IT. The objective of this project is to replace the obsolete technology, technology that has been in place for roughly 20 years, with industry standards technology to improve the reliability, support, and longevity of the PDA Meter Test Lab.

**Project Justification:**

By upgrading all Provers at one-time versus updating them when they fail would result in a 50% savings over a 5 year period. The one-time approach would also ensure all Provers are using the same technology and integration. The 50% savings would be a Capital Cost Avoidance of \$300K.  
 By eliminating the 80386 PCs would result in an avoidance escalation maintenance savings of ½ FTE within the Measurement Regulation Control Department. An O&M Cost Avoidance of \$50K annually.  
 \$5K to \$10K Operational and Maintenance savings annually due to downtime of the Provers availability.  
 The new technology would meet IT's Windows 7 requirements. A one-time O/M Cost Avoidance of approximately \$320K.  
 Support of the PDA application would be provided by a larger pool of SAP developers. An O/M Cost Avoidance of \$64K annually.

Note: Totals may include rounding differences.

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00776.0  
Category: E. Engineering & ES  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00776R - PT81419 PDA Meter Test Lab

**Forecast Methodology:**

**Labor - Zero-Based**

Project is currently in process and based on current project timeline.

**Non-Labor - Zero-Based**

Project is currently in process and based on current project timeline.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00776R**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: E. Engineering & ES  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00776R - PT81419 PDA Meter Test Lab  
 Workpaper Detail: 00776R.001 - PDA Meter Test Lab  
 In-Service Date: 12/31/2014  
 Description:

| Forecast In 2013 \$(000) |            |          |          |  |
|--------------------------|------------|----------|----------|--|
| Years                    | 2014       | 2015     | 2016     |  |
| Labor                    | 256        | 0        | 0        |  |
| Non-Labor                | 321        | 0        | 0        |  |
| NSE                      | 0          | 0        | 0        |  |
| <b>Total</b>             | <b>577</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 2.5        | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00776AA - PT16860 GIS Gas Enhancements 2016**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: E. Engineering & ES  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776AA - PT16860 GIS Gas Enhancements 2016

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |              |      |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|--------------|------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015         | 2016 |
| <b>Years</b>    |            |                   |          |          |          |          |                   |              |      |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 800          |      |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 6,577        |      |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0            |      |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>7,377</b> |      |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 7.8          |      |

**Business Purpose:**

The project will implement Gas GIS application solutions to support Operations, the Distribution Integrity Management Program (DIMP), Pipeline Safety Enhancement Program (PSEP) and the Transmission Integrity Management Program (TIMP). This work is required to support and demonstrate compliance with Federal and State regulations. The project focuses on software development, configuration and data model enhancements of the existing Gas GIS systems.

**Physical Description:**

New application tools to be developed to support compliance and productivity enhancement activities including:

- Provide synchronization between GIS and Maintenance Management Systems (SAP/Maximo) for Gas Distribution and Transmission data
- Provide easy access of Maintenance Management data for equipment through a GIS Viewer
- Provide synchronization between GIS and Document Management Systems for Gas Distribution and Transmission data
- Provide easy access of Document Management Data for equipment through a GIS Viewer

**Project Justification:**

This project represents the Capital activities that support requested DIMP and TIMP O&M activities. The project includes technical and functional application solutions to support DIMP, PSEP and TIMP to ensure company meets regulatory compliance and reporting requirements. Benefits are ability to demonstrate compliance, complete regulatory reporting and cost avoidance.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00776.0  
Category: E. Engineering & ES  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00776AA - PT16860 GIS Gas Enhancements 2016

**Forecast Methodology:**

**Labor - Zero-Based**

Based on historical assumption

**Non-Labor - Zero-Based**

Based on historical assumption

**NSE - Zero-Based**

N/A



**Beginning of Workpaper Sub Details for  
Workpaper Group 00776AA**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: E. Engineering & ES  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776AA - PT16860 GIS Gas Enhancements 2016  
 Workpaper Detail: 00776AA.001 - GIS Gas Enhancements 2016  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |             |             |              |
|--------------------------|--------------|-------------|-------------|--------------|
|                          | Years        | <u>2014</u> | <u>2015</u> | <u>2016</u>  |
| Labor                    |              | 0           | 0           | 800          |
| Non-Labor                |              | 0           | 0           | 6,577        |
| NSE                      |              | 0           | 0           | 0            |
|                          | <b>Total</b> | <b>0</b>    | <b>0</b>    | <b>7,377</b> |
| FTE                      |              | 0.0         | 0.0         | 7.8          |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00776E - PT14924 Enterprise GIS Uplift**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: E. Engineering & ES  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776E - PT14924 Enterprise GIS Uplift

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |              |            |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|--------------|------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015         | 2016       |
| Years           |            |                   |          |          |          |          |                   |              |            |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 143          | 43         |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 1,152        | 370        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0            | 0          |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>1,295</b> | <b>413</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 1.4          | 0.4        |

**Business Purpose:**

The core software used for the enterprise GIS requires updating to stay current with vendor products, maintain compatibility other base technologies, with and to deploy new functionality available with version 10.x.

**Physical Description:**

The scope of this project is to upgrade the enterprise GIS architecture to a more current versions. Included in the project will be uplifts for both SDGE and SCG related applications. Included in the scope is the implementation of a later release of Oracle (probably 11.g) and rewrite of some custom GIS applications.

**Project Justification:**

1) Ensures compatability and currency with other base technologies (e.g. Oracle database) 2) ESRI version 10.x is native 64 bit architecture (vs. 32 bit) providing increased performance 3) exposes maps and functionality via web services allowing for quicker deployment of applications and customizations 4) Native mobile technologies.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00776.0  
Category: E. Engineering & ES  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00776E - PT14924 Enterprise GIS Uplift

**Forecast Methodology:**

**Labor - Zero-Based**

Relative experience and informal input from vendors and other utility organizations.

**Non-Labor - Zero-Based**

Relative experience and informal input from vendors and other utility organizations.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00776E**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: E. Engineering & ES  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776E - PT14924 Enterprise GIS Uplift  
 Workpaper Detail: 00776E.001 - The core software used for the enterprise GIS requires updating to stay current with ve  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |              |            |
|--------------------------|--------------|----------|--------------|------------|
| Years                    |              | 2014     | 2015         | 2016       |
| Labor                    |              | 0        | 143          | 43         |
| Non-Labor                |              | 0        | 1,152        | 370        |
| NSE                      |              | 0        | 0            | 0          |
|                          | <b>Total</b> | <b>0</b> | <b>1,295</b> | <b>413</b> |
| FTE                      |              | 0.0      | 1.4          | 0.4        |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00776P - PT81412 GAS GIS Enhancements 2013**



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: E. Engineering & ES  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776P - PT81412 GAS GIS Enhancements 2013

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016     |
| Years           |            |                   |          |          |          |          |                   |          |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 122               | 0        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 1,032             | 0        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1,154</b>      | <b>0</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 1.2               | 0.0      | 0.0      |

**Business Purpose:**

The project will implement Gas GIS application solutions to support Operations, the Distribution Integrity Management Program (DIMP), Pipeline Safety Enhancement Program (PSEP) and the Transmission Integrity Management Program (TIMP). This work is required to support and demonstrate compliance with Federal and State regulations. The project focuses on software development, configuration and data model enhancements of the existing Gas GIS systems.

**Physical Description:**

New tools to be developed to support DIMP and TIMP activities include:  
 -Generation and Management of DIMP Segments in the GIS  
 -Risk Scoring DIMP segments in the GIS  
 -Generating Transmission and Distribution Annual Reports Directly from GIS  
 -Business District Calculator  
 -Capture of Leaks Directly from the Field  
 -Remodeling of Leak Cycle lines

Modeling Gas storage field network and non-network data including:  
 -Pipeline and Equipment  
 -Storage Tanks  
 -Freshwater Lines

**Project Justification:**

This project represents the Capital activities that support requested DIMP and TIMP O&M activities. The project includes technical and functional application solutions to support DIMP, PSEP and TIMP to ensure company meets regulatory compliance and reporting requirements. Benefits are ability to demonstrate compliance, complete regulatory reporting and cost avoidance.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00776.0  
Category: E. Engineering & ES  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00776P - PT81412 GAS GIS Enhancements 2013

**Forecast Methodology:**

**Labor - Zero-Based**

Based on actuals, project is in service and completed as of 3/31/2014

**Non-Labor - Zero-Based**

Based on actuals, project is in service and completed as of 3/31/2014

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00776P**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: E. Engineering & ES  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776P - PT81412 GAS GIS Enhancements 2013  
 Workpaper Detail: 00776P.001 - GAS GIS Enhancements 2013  
 In-Service Date: 03/31/2014  
 Description:

| Forecast In 2013 \$(000) |              |              |          |          |
|--------------------------|--------------|--------------|----------|----------|
| Years                    |              | 2014         | 2015     | 2016     |
| Labor                    |              | 122          | 0        | 0        |
| Non-Labor                |              | 1,032        | 0        | 0        |
| NSE                      |              | 0            | 0        | 0        |
|                          | <b>Total</b> | <b>1,154</b> | <b>0</b> | <b>0</b> |
| FTE                      |              | 1.2          | 0.0      | 0.0      |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00776Y - PT81461 Gas GIS Project 2014**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: E. Engineering & ES  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776Y - PT81461 Gas GIS Project 2014

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016     |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 400               | 133        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 100               | 100        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>500</b>        | <b>233</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 3.9               | 1.3        | 0.0      |

**Business Purpose:**

The project will implement Gas GIS application solutions to support Operations, the Distribution Integrity Management Program (DIMP), Pipeline Safety Enhancement Program (PSEP) and the Transmission Integrity Management Program (TIMP). This work is required to support and demonstrate compliance with Federal and State regulations. The project focuses on software development, configuration and data model enhancements of the existing Gas GIS systems.

**Physical Description:**

New application tools to be developed to support compliance and productivity enhancement activities including:

- Completion of applications enhancements to support automated processing of SCG and SDG&E Distribution Routine Leak Survey
- Automated tools to support Leak Survey for Transmission and Storage (ensure Leak Survey maps can be produced from GIS)
- DIMP Risk and Threat Modeling Enhancements (produce service risk models, migrate models to enterprise GIS database, etc) and Support for Special Surveys (i.e. identifying and overriding survey cycle for high risk pipe)
- Compliance Dashboard and Reporting (summarizing DIMP risk and threat, identifying pipe on special survey, etc)
- GIS tools/enhancements to support Lean Six Sigma Recommendations and Other Productivity Enhancements
- GIS tools to support Land and Rights of Way data management (Addition and ability to view encroachment research data, etc)
- Additional Leak Repair Enhancements (lab analysis integration, improved leak error and exception processing, modeling leaks on abandoned pipe, etc)
- Ensuring all Transmission, Distribution, Storage Field and Other Above Ground Facility and Land Rights data are available through single viewer

CAD Design Engineering and 3D Storage Modeling

- Provide tools to aid in design and construction of Transmission and Distribution pipelines, regulator stations, meter set assemblies, valve control stations, storage fields, compression stations and miscellaneous support drawings

Emergency Operations, Advanced Apps and Data Governance & Data Quality support including:

- Support for Tablet and Smartphone Devices (enable access to GIS data from these devices, starting with Emergency Operations)
- Emergency Operations Enhancements (Provide Event Alerts; Display Field Service Staff, Truck, Message Center Report and Emergency Incident Report Locations; etc)
- QA/QC Enhancements (provide QA/QC tools to support GIS standards, maintain CP, Isolation Area and Pr

Note: Totals may include rounding differences.

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00776.0  
Category: E. Engineering & ES  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00776Y - PT81461 Gas GIS Project 2014

**Project Justification:**

This project represents the Capital activities that support requested DIMP and TIMP O&M activities. The project includes technical and functional application solutions to support DIMP, PSEP and TIMP to ensure company meets regulatory compliance and reporting requirements. Benefits are ability to demonstrate compliance, complete regulatory reporting and cost avoidance.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00776.0  
Category: E. Engineering & ES  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00776Y - PT81461 Gas GIS Project 2014

**Forecast Methodology:**

**Labor - Zero-Based**

Based on historical assumptions

**Non-Labor - Zero-Based**

Based on historical assumptions

**NSE - Zero-Based**

N/A



**Beginning of Workpaper Sub Details for  
Workpaper Group 00776Y**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: E. Engineering & ES  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776Y - PT81461 Gas GIS Project 2014  
 Workpaper Detail: 00776Y.001 - Gas GIS Project 2014  
 In-Service Date: 03/31/2015  
 Description:

| Forecast In 2013 \$(000) |              |            |            |          |
|--------------------------|--------------|------------|------------|----------|
|                          | Years        | 2014       | 2015       | 2016     |
| Labor                    |              | 400        | 133        | 0        |
| Non-Labor                |              | 100        | 100        | 0        |
| NSE                      |              | 0          | 0          | 0        |
|                          | <b>Total</b> | <b>500</b> | <b>233</b> | <b>0</b> |
| FTE                      |              | 3.9        | 1.3        | 0.0      |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00776Z - PT15859 GIS Gas Enhancements 2015**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: E. Engineering & ES  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776Z - PT15859 GIS Gas Enhancements 2015

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |              | Adjusted Recorded |          |          |          |          | Adjusted Forecast |              |              |
|-----------------|--------------|-------------------|----------|----------|----------|----------|-------------------|--------------|--------------|
|                 |              | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015         | 2016         |
|                 | <b>Years</b> |                   |          |          |          |          |                   |              |              |
| Labor           | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 401          | 133          |
| Non-Labor       | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 2,710        | 970          |
| NSE             | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 0            | 0            |
|                 | <b>Total</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>3,111</b> | <b>1,103</b> |
| FTE             | Zero-Based   | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 3.9          | 1.3          |

**Business Purpose:**

The project will implement Gas GIS application solutions to support Operations, the Distribution Integrity Management Program (DIMP), Pipeline Safety Enhancement Program (PSEP) and the Transmission Integrity Management Program (TIMP). This work is required to support and demonstrate compliance with Federal and State regulations. The project focuses on software development, configuration and data model enhancements of the existing Gas GIS systems.

**Physical Description:**

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00776.0  
Category: E. Engineering & ES  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00776Z - PT15859 GIS Gas Enhancements 2015

New application tools to be developed to support compliance and productivity enhancement activities including:  
- Completion of Automated tools to support Leak Survey for Transmission, Storage and Special Surveys (ensure Leak Survey maps can be produced from GIS)  
- Completion of Compliance Dashboard and Reporting (summarizing DIMP risk and threat, identifying pipe on special survey, etc)

CAD Design Engineering and 3D Storage Modeling  
- Complete Field Capture of Data

Emergency Operations, Advanced Apps and Data Governance & Data Quality support including:  
- Completion of Support for Tablet and Smartphone Devices (enable access to GIS data from these devices, starting with Emergency Operations)  
- Completion of Emergency Operations Enhancements (Provide Event Alerts; Display Field Service Staff, Truck, Message Center Report and Emergency Incident Report Locations; etc)  
- Completion of QA/QC Enhancements (provide QA/QC tools to support GIS standards, maintain CP, Isolation Area and Pressure District integrity, etc)

Gas Transmission HPPDB, Enterprise GIS and Storage Field and Other Above Ground Facility integration / Alignment and support including:  
- Integration / Alignment of Data Models  
- Ensuring duplicate maintenance is minimized where possible

CAD Design Engineering and 3D Storage Modeling  
- Complete Field Capture of Data

Emergency Operations, Advanced Apps and Data Governance & Data Quality support including:  
- Completion of Support for Tablet and Smartphone Devices (enable access to GIS data from these devices, starting with Emergency Operations)  
- Completion of Emergency Operations Enhancements (Provide Event Alerts; Display Field Service Staff, Truck, Message Center Report and Emergency Incident Report Locations; etc)  
- Completion of QA/QC Enhancements (provide QA/QC tools to support GIS standards, maintain CP, Isolation Area and Pressure District integrity, etc)

**Project Justification:**

This project represents the Capital activities that support requested DIMP and TIMP O&M activities. The project includes technical and functional application solutions to support DIMP, PSEP and TIMP to ensure company meets regulatory compliance and reporting requirements. Benefits are ability to demonstrate compliance, complete regulatory reporting and cost avoidance.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00776.0  
Category: E. Engineering & ES  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00776Z - PT15859 GIS Gas Enhancements 2015

**Forecast Methodology:**

**Labor - Zero-Based**

Based on historical assumption

**Non-Labor - Zero-Based**

Based on historical assumption

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00776Z**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: E. Engineering & ES  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776Z - PT15859 GIS Gas Enhancements 2015  
 Workpaper Detail: 00776Z.001 - PT15859 GIS Gas Enhancements 2015  
 In-Service Date: 03/31/2016  
 Description:

| Forecast In 2013 \$(000) |          |              |              |  |
|--------------------------|----------|--------------|--------------|--|
| Years                    | 2014     | 2015         | 2016         |  |
| Labor                    | 0        | 401          | 133          |  |
| Non-Labor                | 0        | 2,710        | 970          |  |
| NSE                      | 0        | 0            | 0            |  |
| <b>Total</b>             | <b>0</b> | <b>3,111</b> | <b>1,103</b> |  |
| FTE                      | 0.0      | 3.9          | 1.3          |  |

*Note: Totals may include rounding differences.*



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Category: F. Environmental  
Workpaper: 00786C

**Summary for Category: F. Environmental**

| In 2013\$ (000)   |          |                   |            |          |
|-------------------|----------|-------------------|------------|----------|
| Adjusted-Recorded |          | Adjusted-Forecast |            |          |
| 2013              |          | 2014              | 2015       | 2016     |
| Labor             | 0        | 263               | 104        | 0        |
| Non-Labor         | 0        | 261               | 155        | 0        |
| NSE               | 0        | 0                 | 0          | 0        |
| <b>Total</b>      | <b>0</b> | <b>524</b>        | <b>259</b> | <b>0</b> |
| FTE               | 0.0      | 2.6               | 1.0        | 0.0      |

**00786C PT14862 Greenhouse Gas and Environmental Sustainability Management Tool**

|              |          |            |            |          |
|--------------|----------|------------|------------|----------|
| Labor        | 0        | 263        | 104        | 0        |
| Non-Labor    | 0        | 261        | 155        | 0        |
| NSE          | 0        | 0          | 0          | 0        |
| <b>Total</b> | <b>0</b> | <b>524</b> | <b>259</b> | <b>0</b> |
| FTE          | 0.0      | 2.6        | 1.0        | 0.0      |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00786C - PT14862 Greenhouse Gas and Environmental Sustainability Management**  
**Tool**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00786.0  
 Category: F. Environmental  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00786C - PT14862 Greenhouse Gas and Environmental Sustainability Management Tool

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |            |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 263               | 104        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 261               | 155        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>524</b>        | <b>259</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 2.6               | 1.0        | 0.0      |

**Business Purpose:**

The pressure is increasing on businesses to have solid environmental data management tools in place for ensuring consistency, accuracy, traceability, and compliance. With the onset of increasingly complex environmental regulations such as the mandatory federal and state Greenhouse Gas requirements and the need to meet the Utilities strategic objectives related to Corporate Responsibility/Sustainability and Green Operations/Supply Initiatives, a new tool is needed for the purpose of centralizing, analyzing, forecasting, reporting, monitoring, and quality assuring the Greenhouse Gas information. Currently SoCalGas and SDG&E are using various manual methods (i.e. spreadsheets) for collecting such data from operations and customers for environmental requirements and it is difficult to quality assure for accurate inventorying and reporting needed to satisfy compliance obligations, analyze trends, forecast, and traceability.

**Physical Description:**

The purpose of this project is to automate the Greenhouse Gas and Operations management process by means of a tool that can provide centralization of Greenhouse information, data analysis, forecasting, reporting, and monitoring. Help meet compliance obligations under AB32 Cap and Trade greenhouse gas requirements. Able to support the Green Operations/Supply Strategic Initiatives and Corporate Responsibility/Sustainability reporting. And able to capture data needed to meet future and existing compliance obligations such as remote environmental alarm monitoring of fueling stations. Such tool will also need the capability of interfacing with corporate, operational, and customer systems (Credit360, OSI PI, SAP, AMI, TEMS, and Fuel Station Remote Monitoring) as to ensure Greenhouse information is being collected and reported accurately.

**Project Justification:**

Increased timeliness and accuracy of reported Greenhouse information and the ability to quickly verify and trace. Increased assurance of compliance with various reporting requirements. Accurate base-line for the Cap and Trade program. Allows the company to make sound business/financial decisions on how best to comply. And help in the analysis of Cap and Trade bidding.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00786.0  
Category: F. Environmental  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00786C - PT14862 Greenhouse Gas and Environmental Sustainability Management Tool

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00786C**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00786.0  
 Category: F. Environmental  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00786C - PT14862 Greenhouse Gas and Environmental Sustainability Management Tool  
 Workpaper Detail: 00786C.001 - The pressure is increasing on businesses to have solid environmental data management to  
 In-Service Date: 03/31/2015  
 Description:

| Forecast In 2013 \$(000) |              |            |            |          |  |
|--------------------------|--------------|------------|------------|----------|--|
| Years                    |              | 2014       | 2015       | 2016     |  |
| Labor                    |              | 263        | 104        | 0        |  |
| Non-Labor                |              | 261        | 155        | 0        |  |
| NSE                      |              | 0          | 0          | 0        |  |
|                          | <b>Total</b> | <b>524</b> | <b>259</b> | <b>0</b> |  |
| FTE                      |              | 2.6        | 1.0        | 0.0      |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Category: G. Gas Distribution  
Workpaper: VARIOUS

**Summary for Category: G. Gas Distribution**

|              | In 2013\$ (000)   |                   |               |               |
|--------------|-------------------|-------------------|---------------|---------------|
|              | Adjusted-Recorded | Adjusted-Forecast |               |               |
|              | 2013              | 2014              | 2015          | 2016          |
| Labor        | 0                 | 4,534             | 5,505         | 6,186         |
| Non-Labor    | 0                 | 18,912            | 10,547        | 5,682         |
| NSE          | 0                 | 0                 | 0             | 0             |
| <b>Total</b> | <b>0</b>          | <b>23,446</b>     | <b>16,052</b> | <b>11,868</b> |
| FTE          | 0.0               | 44.4              | 53.9          | 60.6          |

**00777E PT81454 SCG Field MDT Upgrade 2013**

|              |          |              |          |          |
|--------------|----------|--------------|----------|----------|
| Labor        | 0        | 0            | 0        | 0        |
| Non-Labor    | 0        | 2,869        | 0        | 0        |
| NSE          | 0        | 0            | 0        | 0        |
| <b>Total</b> | <b>0</b> | <b>2,869</b> | <b>0</b> | <b>0</b> |
| FTE          | 0.0      | 0.0          | 0.0      | 0.0      |

**00776AB Electronic Leak Survey**

|              |          |          |              |          |
|--------------|----------|----------|--------------|----------|
| Labor        | 0        | 0        | 348          | 0        |
| Non-Labor    | 0        | 0        | 1,200        | 0        |
| NSE          | 0        | 0        | 0            | 0        |
| <b>Total</b> | <b>0</b> | <b>0</b> | <b>1,548</b> | <b>0</b> |
| FTE          | 0.0      | 0.0      | 3.4          | 0.0      |

**00750A PT81420 M&I Compliance Reporting**

|              |          |            |          |          |
|--------------|----------|------------|----------|----------|
| Labor        | 0        | 119        | 0        | 0        |
| Non-Labor    | 0        | 682        | 0        | 0        |
| NSE          | 0        | 0          | 0        | 0        |
| <b>Total</b> | <b>0</b> | <b>801</b> | <b>0</b> | <b>0</b> |
| FTE          | 0.0      | 1.2        | 0.0      | 0.0      |

**00776A PT - 14807 Click Upgrade**

|              |          |              |              |              |
|--------------|----------|--------------|--------------|--------------|
| Labor        | 0        | 698          | 1,392        | 1,169        |
| Non-Labor    | 0        | 2,548        | 4,976        | 397          |
| NSE          | 0        | 0            | 0            | 0            |
| <b>Total</b> | <b>0</b> | <b>3,246</b> | <b>6,368</b> | <b>1,566</b> |
| FTE          | 0.0      | 6.8          | 13.6         | 11.5         |

**00776D PT14919 Click and SAP Disaster Recovery Tier Upgrade**

|              |          |              |          |          |
|--------------|----------|--------------|----------|----------|
| Labor        | 0        | 217          | 0        | 0        |
| Non-Labor    | 0        | 836          | 0        | 0        |
| NSE          | 0        | 0            | 0        | 0        |
| <b>Total</b> | <b>0</b> | <b>1,053</b> | <b>0</b> | <b>0</b> |
| FTE          | 0.0      | 2.1          | 0.0      | 0.0      |

Note: Totals may include rounding differences.

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Category: G. Gas Distribution  
Workpaper: VARIOUS

| In 2013\$ (000)   |                   |      |      |
|-------------------|-------------------|------|------|
| Adjusted-Recorded | Adjusted-Forecast |      |      |
| 2013              | 2014              | 2015 | 2016 |

**00776F PT15819 Construction Planning and Design CPD Reporting Enhancements**

|              |          |          |              |              |
|--------------|----------|----------|--------------|--------------|
| Labor        | 0        | 0        | 116          | 87           |
| Non-Labor    | 0        | 0        | 1,000        | 1,000        |
| NSE          | 0        | 0        | 0            | 0            |
| <b>Total</b> | <b>0</b> | <b>0</b> | <b>1,116</b> | <b>1,087</b> |
| FTE          | 0.0      | 0.0      | 1.1          | 0.9          |

**00776G PT15820 SCG Maintenance and Inspection Compliance Reporting**

|              |          |          |              |              |
|--------------|----------|----------|--------------|--------------|
| Labor        | 0        | 0        | 186          | 186          |
| Non-Labor    | 0        | 0        | 1,000        | 1,000        |
| NSE          | 0        | 0        | 0            | 0            |
| <b>Total</b> | <b>0</b> | <b>0</b> | <b>1,186</b> | <b>1,186</b> |
| FTE          | 0.0      | 0.0      | 1.8          | 1.8          |

**00776H PT15821 Field Force Reporting**

|              |          |          |          |              |
|--------------|----------|----------|----------|--------------|
| Labor        | 0        | 0        | 0        | 93           |
| Non-Labor    | 0        | 0        | 0        | 1,050        |
| NSE          | 0        | 0        | 0        | 0            |
| <b>Total</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1,143</b> |
| FTE          | 0.0      | 0.0      | 0.0      | 0.9          |

**00776N PT16802 Click v8 Functional Enhancements**

|              |          |          |          |              |
|--------------|----------|----------|----------|--------------|
| Labor        | 0        | 0        | 0        | 2,784        |
| Non-Labor    | 0        | 0        | 0        | 600          |
| NSE          | 0        | 0        | 0        | 0            |
| <b>Total</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>3,384</b> |
| FTE          | 0.0      | 0.0      | 0.0      | 27.2         |

**00776O PT81431 Click M&I M&R Stabilization**

|              |          |            |          |          |
|--------------|----------|------------|----------|----------|
| Labor        | 0        | 213        | 0        | 0        |
| Non-Labor    | 0        | 613        | 0        | 0        |
| NSE          | 0        | 0          | 0        | 0        |
| <b>Total</b> | <b>0</b> | <b>826</b> | <b>0</b> | <b>0</b> |
| FTE          | 0.0      | 2.1        | 0.0      | 0.0      |

**00776Q PT81428 SCG M&I GuiXT Phase 2**

|              |          |            |          |          |
|--------------|----------|------------|----------|----------|
| Labor        | 0        | 197        | 0        | 0        |
| Non-Labor    | 0        | 737        | 0        | 0        |
| NSE          | 0        | 0          | 0        | 0        |
| <b>Total</b> | <b>0</b> | <b>934</b> | <b>0</b> | <b>0</b> |
| FTE          | 0.0      | 1.9        | 0.0      | 0.0      |

**00786A PT14810 - Gas Operations Performance Analytics (GOPA) Phase 2**

|              |          |              |           |          |
|--------------|----------|--------------|-----------|----------|
| Labor        | 0        | 524          | 17        | 0        |
| Non-Labor    | 0        | 1,714        | 1         | 0        |
| NSE          | 0        | 0            | 0         | 0        |
| <b>Total</b> | <b>0</b> | <b>2,238</b> | <b>18</b> | <b>0</b> |
| FTE          | 0.0      | 5.1          | 0.2       | 0.0      |

Note: Totals may include rounding differences.



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Category: G. Gas Distribution  
Workpaper: VARIOUS

|   |          | In 2013\$ (000)   |              |              |  |
|---|----------|-------------------|--------------|--------------|--|
| Adjusted-Recorded                         |          | Adjusted-Forecast |              |              |  |
| 2013                                      |          | 2014              | 2015         | 2016         |  |
| <b>00810A PTCPD SCG CPD Enh Phase 2</b>   |          |                   |              |              |  |
| Labor                                     | 0        | 0                 | 3,411        | 1,867        |  |
| Non-Labor                                 | 0        | 0                 | 1,320        | 1,635        |  |
| NSE                                       | 0        | 0                 | 0            | 0            |  |
| <b>Total</b>                              | <b>0</b> | <b>0</b>          | <b>4,731</b> | <b>3,502</b> |  |
| FTE                                       | 0.0      | 0.0               | 33.5         | 18.3         |  |
| <b>00810B PT13810 SCG CPD Enh Phase 1</b> |          |                   |              |              |  |
| Labor                                     | 0        | 2,566             | 35           | 0            |  |
| Non-Labor                                 | 0        | 8,913             | 1,050        | 0            |  |
| NSE                                       | 0        | 0                 | 0            | 0            |  |
| <b>Total</b>                              | <b>0</b> | <b>11,479</b>     | <b>1,085</b> | <b>0</b>     |  |
| FTE                                       | 0.0      | 25.2              | 0.3          | 0.0          |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group  
00776AB - Electronic Leak Survey**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: G. Gas Distribution  
 Category-Sub: 3. Mandated  
 Workpaper Group: 00776AB - Electronic Leak Survey

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |              |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|--------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015         | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |              |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 348          | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 1,200        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0            | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>1,548</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 3.4          | 0.0      |

**Business Purpose:**

The SoCalGas regions are experiencing problems with the plotting and printing of paper leak survey maps from GIS and sometimes completed paper maps are difficult to locate when an auditor requests to review them. This project will eliminate the need to plot, print, ship and store 27,000 18" X 24" paper leak survey maps annually and enable quick access to completed survey maps by utilizing a handheld electronic device with GPS enabled to perform leak survey activities and storing the completed maps in our system of record, SAP.

**Physical Description:**

This project will incorporate a 3rd party's GPS based software, which will overlay our existing GIS pipeline maps. This project will change the way we issue, complete and store our leak survey maps by eliminating paper and moving to electronic maps. This software will interface and communicate with GIS, SAP and potentially, ClickSchedule, ClickMobile, HANA and/or DART.

**Project Justification:**

The software involved in this project will enable us to track the progress of leak survey activities through electronic reports, help to ensure that all pipe is surveyed properly via GPS 'bread crumb' tracking of leak survey activities, make the tracking and follow up for CGIs and AOCs discovered during leak survey much easier for local management via electronic reports, and allow the completed maps to be readily available for review by a supervisor or auditor via SAP.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00776.0  
Category: G. Gas Distribution  
Category-Sub: 3. Mandated  
Workpaper Group: 00776AB - Electronic Leak Survey

**Forecast Methodology:**

**Labor - Zero-Based**

Assumptions based on actual paper and ink costs and the average amount of time a leakage clerk spends on a leak survey map, per the leakage supervisors and overall project estimations provided by the vendor.

**Non-Labor - Zero-Based**

Assumptions based on actual paper and ink costs and the average amount of time a leakage clerk spends on a leak survey map, per the leakage supervisors and overall project estimations provided by the vendor.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00776AB**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: G. Gas Distribution  
 Category-Sub: 3. Mandated  
 Workpaper Group: 00776AB - Electronic Leak Survey  
 Workpaper Detail: 00776AB.001 - Electronic Leak Survey  
 In-Service Date: 12/31/2015  
 Description:

| Forecast In 2013 \$(000) |              |          |              |          |  |
|--------------------------|--------------|----------|--------------|----------|--|
| Years                    |              | 2014     | 2015         | 2016     |  |
| Labor                    |              | 0        | 348          | 0        |  |
| Non-Labor                |              | 0        | 1,200        | 0        |  |
| NSE                      |              | 0        | 0            | 0        |  |
|                          | <b>Total</b> | <b>0</b> | <b>1,548</b> | <b>0</b> |  |
| FTE                      |              | 0.0      | 3.4          | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00750A - PT81420 M&I Compliance Reporting**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00750.0  
 Category: G. Gas Distribution  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00750A - PT81420 M&I Compliance Reporting

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |          |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 119               | 0        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 682               | 0        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>801</b>        | <b>0</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 1.2               | 0.0      | 0.0      |

**Business Purpose:**

This project will enable SCG and SDG&E Gas Distribution Operations to respond more quickly and accurately to the CPUC Annual Distribution audits, the growing number of external data requests, and the increasingly complex requests for ad-hoc compliance, operational and Engineering reports. The PG&E San Bruno incident, the continuously changing regulatory requirements associated with the Distribution Integrity Management Program (DIMP) and the Pipeline Safety Enhancements Program (PSEP), have resulted in an increased number of requests for inspection and maintenance data for the four SCG Gas Distribution Regions (Inland, Northern, Pacific, Orange Coast,) and San Diego.

**Physical Description:**

Improve Data Load Performance Issues and data accuracy  
 Develop 82 Standard Compliance reports  
 Provide self-service capability to create ad-hoc reports and perform trend analysis  
 Provide a M&I data repository to support future reporting requirements  
 Implement an architectural solution that provides flexibility to quickly change data models  
 Implement a SAP HANA QA and Production environment  
 Reduce data load time by extracting RAW data from SAP PM system to HANA, and change the full load to delta load  
 Migrate complex logic from the BW data extractions layer to the BO reporting layer to allow for more flexibility to build ad-hoc report or modify standard reports

**Project Justification:**

Title 49 Dept of Transportation Code of Federal Regulations 192 (49 CFR 192). • CPUC General Order 112-E (CPUC GO112-E). • National Transportation Safety Board (NTSB) Accident Investigation. • Pipeline & Hazardous Materials Safety Administration (PHMSA) Annual and Incident Reporting. • National Pipeline Mapping Systems Annual Reporting.

*Note: Totals may include rounding differences.*



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00750.0  
Category: G. Gas Distribution  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00750A - PT81420 M&I Compliance Reporting

**Forecast Methodology:**

**Labor - Zero-Based**

The forecast is based upon the current project timeline.

**Non-Labor - Zero-Based**

The forecast is based upon the current project timeline.

**NSE - Zero-Based**

NA

**Beginning of Workpaper Sub Details for  
Workpaper Group 00750A**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00750.0  
 Category: G. Gas Distribution  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00750A - PT81420 M&I Compliance Reporting  
 Workpaper Detail: 00750A.001 - M&I Compliance Reporting  
 In-Service Date: 07/31/2014  
 Description:

| Forecast In 2013 \$(000) |            |          |          |  |
|--------------------------|------------|----------|----------|--|
| Years                    | 2014       | 2015     | 2016     |  |
| Labor                    | 119        | 0        | 0        |  |
| Non-Labor                | 682        | 0        | 0        |  |
| NSE                      | 0          | 0        | 0        |  |
| <b>Total</b>             | <b>801</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 1.2        | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group  
00776A - PT - 14807 Click Upgrade**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: G. Gas Distribution  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776A - PT - 14807 Click Upgrade

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |              |              |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|--------------|--------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015         | 2016         |
| <b>Years</b>    |            |                   |          |          |          |          |                   |              |              |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 698               | 1,392        | 1,169        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 2,548             | 4,976        | 397          |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0            | 0            |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>3,246</b>      | <b>6,368</b> | <b>1,566</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 6.8               | 13.6         | 11.5         |

**Business Purpose:**

Due to limitations within Click 7.5 and a highly customized mobile solution, the implementation of latest version of Click will provide Sempra Utilities the platform to address and resolve many of the current business and software issues by leveraging more out of the box functionality, minimizing customization points, increasing internal Sempra IT development capabilities, and improving operational and KPI reporting and business insight – as well as position Sempra Utilities to remain current with Vendor Support. Upgrades to the Service Optimization Suite (Schedule, Mobile and Analyze software packages) are included in this project as well as server hardware replacements.

The Click system upgrade is a multi-phased project, including;

- Upgrade and migration of the system to the latest version of Click
- Development of an improved Payroll application (and supporting components)
- Mobile usability and form improvements

**Physical Description:**

- Real time visibility to crew makeup and crew board functionality to quickly update crew assignments
- Enhanced performance reporting utilizing Click Analyze
- Payroll Application Development
- Click Schedule and Click Analyze HTML5 enabled user interface (web)
- Single log in solution
- Enhanced ClickMobile form editor and configuration manager tool set
- Additional Physical, Database, and VM servers

**Project Justification:**

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00776.0  
Category: G. Gas Distribution  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00776A - PT - 14807 Click Upgrade

Gaining back lost time – Soft Benefits

Morning Shuffle: New real-time crew management board will allow for opportunities of business process improvement for business units. Increase accuracy of crew management by allowing real time view between Area Resource Scheduling Organizations, crews and Field Supervisors. Reduce crew setup errors with an easier and simplified crew management board.

SDG&E and SCG – Recover 4-6 minutes of previously lost productivity (per day savings)

SCG – Recovery of up to 15 minutes per crew allocation change/update for Dispatchers

Improved “Enhancement Delivery Time”: The upgraded system provides a technological platform that enables us to take further ownership and increase enhancement delivery time. This new platform will further allow us to move away from a system of customizations and closer to a system of configurations; resulting in stability, quicker turnaround and shorter test cycles. A system built more upon configurations will reduce effort spent on managing and troubleshooting.

Cost Avoidance / Reduction:

Vendor Supportability (Cost Avoidance): Click 7.5 is reaching End Of Live and Vendor Support. Reference Appendix G for uplift cost details.

In House Development: Increase support and development activities along Sempra’s value-chain by in-sourcing three dedicated developers for Click. Increase IT capabilities, reduce vendor dependencies, as well as increase “Enhancement Delivery Time”.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00776.0  
Category: G. Gas Distribution  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00776A - PT - 14807 Click Upgrade

**Forecast Methodology:**

**Labor - Zero-Based**

Project is currently in progress, based on current timeline

**Non-Labor - Zero-Based**

Project is currently in progress, based on current timeline

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00776A**



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: G. Gas Distribution  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776A - PT - 14807 Click Upgrade  
 Workpaper Detail: 00776A.001 - Due to limitations within Click 7.5 and a highly customized mobile solution, the implem  
 In-Service Date: 06/30/2016  
 Description:

| <b>Forecast In 2013 \$(000)</b> |              |                     |                     |                     |
|---------------------------------|--------------|---------------------|---------------------|---------------------|
| <b>Years</b>                    |              | <u><b>2014</b></u>  | <u><b>2015</b></u>  | <u><b>2016</b></u>  |
| Labor                           |              | 698                 | 1,392               | 1,169               |
| Non-Labor                       |              | 2,298               | 4,263               | 397                 |
| NSE                             |              | 0                   | 0                   | 0                   |
|                                 | <b>Total</b> | <u><b>2,996</b></u> | <u><b>5,655</b></u> | <u><b>1,566</b></u> |
| FTE                             |              | 6.8                 | 13.6                | 11.5                |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: G. Gas Distribution  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776A - PT - 14807 Click Upgrade  
 Workpaper Detail: 00776A.002 - Due to limitations within Click 7.5 and a highly customized mobile solution, the implem  
 In-Service Date: 01/31/2015  
 Description:

| Forecast In 2013 \$(000) |          |            |          |  |
|--------------------------|----------|------------|----------|--|
| Years                    | 2014     | 2015       | 2016     |  |
| Labor                    | 0        | 0          | 0        |  |
| Non-Labor                | 0        | 713        | 0        |  |
| NSE                      | 0        | 0          | 0        |  |
| <b>Total</b>             | <b>0</b> | <b>713</b> | <b>0</b> |  |
| FTE                      | 0.0      | 0.0        | 0.0      |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: G. Gas Distribution  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776A - PT - 14807 Click Upgrade  
 Workpaper Detail: 00776A.003 - Click Upgrade  
 In-Service Date: 06/30/2014  
 Description:

| Forecast In 2013 \$(000) |            |          |          |  |
|--------------------------|------------|----------|----------|--|
| Years                    | 2014       | 2015     | 2016     |  |
| Labor                    | 0          | 0        | 0        |  |
| Non-Labor                | 250        | 0        | 0        |  |
| NSE                      | 0          | 0        | 0        |  |
| <b>Total</b>             | <b>250</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 0.0        | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00776D - PT14919 Click and SAP Disaster Recovery Tier Upgrade**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: G. Gas Distribution  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776D - PT14919 Click and SAP Disaster Recovery Tier Upgrade

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |          |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 217               | 0        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 836               | 0        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1,053</b>      | <b>0</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 2.1               | 0.0      | 0.0      |

**Business Purpose:**

Click and SAP-PM are essential enterprise systems that are currently in Disaster Recovery (DR) Tier 3, which could result in up to 5 day downtime, resulting in delays in planned, outage and emergency work scheduling and dispatching. Related work management systems, NMS, CIS, and Cisco/SORT are DR Tier 1 and GIS is DR Tier 2.

**Physical Description:**

Provide backup systems, databases, and integrations as required to move Click and SAP-PM to from Disaster Recovery (DR) Tier 3 to DR Tier 1.

**Project Justification:**

- \* Avoid significant customer and reliability impact if Click and/or SAP-PM outage is coincident with peaks in outage and restoration work (e.g., natural disaster impacting both data center and electric distribution system)
- \* Reduce restoration time for ability to scheduled and dispatch work originated in Network Management System (NMS)
- \* Enhance Business Resumption Plan activities by restoring automated systems and reduce the productivity losses associated with reverting to inefficient manual processes

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00776.0  
Category: G. Gas Distribution  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00776D - PT14919 Click and SAP Disaster Recovery Tier Upgrade

**Forecast Methodology:**

**Labor - Zero-Based**

Based on internal labor hours estimates

**Non-Labor - Zero-Based**

Based on vendor estimates

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00776D**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: G. Gas Distribution  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776D - PT14919 Click and SAP Disaster Recovery Tier Upgrade  
 Workpaper Detail: 00776D.001 - Click and SAP-PM  
 In-Service Date: 12/31/2014  
 Description:

| Forecast In 2013 \$(000) |            |          |          |  |
|--------------------------|------------|----------|----------|--|
| Years                    | 2014       | 2015     | 2016     |  |
| Labor                    | 217        | 0        | 0        |  |
| Non-Labor                | 194        | 0        | 0        |  |
| NSE                      | 0          | 0        | 0        |  |
| <b>Total</b>             | <b>411</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 2.1        | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: G. Gas Distribution  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776D - PT14919 Click and SAP Disaster Recovery Tier Upgrade  
 Workpaper Detail: 00776D.002 - Click and SAP-PM are essential enterprise systems that are currently in Disaster Recove  
 In-Service Date: 12/31/2014  
 Description:

| Forecast In 2013 \$(000) |              |            |          |          |  |
|--------------------------|--------------|------------|----------|----------|--|
| Years                    |              | 2014       | 2015     | 2016     |  |
| Labor                    |              | 0          | 0        | 0        |  |
| Non-Labor                |              | 642        | 0        | 0        |  |
| NSE                      |              | 0          | 0        | 0        |  |
|                          | <b>Total</b> | <b>642</b> | <b>0</b> | <b>0</b> |  |
| FTE                      |              | 0.0        | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00776F - PT15819 Construction Planning and Design CPD Reporting Enhancements**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: G. Gas Distribution  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776F - PT15819 Construction Planning and Design CPD Reporting Enhancements

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |              |              |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|--------------|--------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015         | 2016         |
| <b>Years</b>    |            |                   |          |          |          |          |                   |              |              |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 116          | 87           |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 1,000        | 1,000        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0            | 0            |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>1,116</b> | <b>1,087</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 1.1          | 0.9          |

**Business Purpose:**

The existing Construction Management System (CMS) DataMart is inadequate for the Construction Planning and Design (CPD) reporting. Enhancements are not in the current CPD Project scope, this project is necessary for update the reports and data processed for CPD.

**Physical Description:**

This project will cover 80 plus reports and enable self service analytics using HANA, Business Objects and Lumira.

**Project Justification:**

The existing Construction Management System (CMS) DataMart is inadequate for the Construction Planning and Design (CPD) reporting. Enhancements are not in the current CPD Project scope, this project is necessary for update the reports and data processed for CPD.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00776.0  
Category: G. Gas Distribution  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00776F - PT15819 Construction Planning and Design CPD Reporting Enhancements

**Forecast Methodology:**

**Labor - Zero-Based**

Project is based on internal labor hours estimation.

**Non-Labor - Zero-Based**

Project is based on vendor estimation.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00776F**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: G. Gas Distribution  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776F - PT15819 Construction Planning and Design CPD Reporting Enhancements  
 Workpaper Detail: 00776F.001 - The existing Construction Management System (CMS) DataMart is inadequate for the Constr  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |              |              |  |
|--------------------------|--------------|----------|--------------|--------------|--|
| Years                    |              | 2014     | 2015         | 2016         |  |
| Labor                    |              | 0        | 116          | 87           |  |
| Non-Labor                |              | 0        | 1,000        | 1,000        |  |
| NSE                      |              | 0        | 0            | 0            |  |
|                          | <b>Total</b> | <b>0</b> | <b>1,116</b> | <b>1,087</b> |  |
| FTE                      |              | 0.0      | 1.1          | 0.9          |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00776G - PT15820 SCG Maintenance and Inspection Compliance Reporting**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: G. Gas Distribution  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776G - PT15820 SCG Maintenance and Inspection Compliance Reporting

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |              |              |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|--------------|--------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015         | 2016         |
| <b>Years</b>    |            |                   |          |          |          |          |                   |              |              |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 186          | 186          |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 1,000        | 1,000        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0            | 0            |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>1,186</b> | <b>1,186</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 1.8          | 1.8          |

**Business Purpose:**

Provide integrated data for analysis in managing compliance, asset maintenance and planning, integrity management and reporting.

**Physical Description:**

Enhance the M&I reporting environment with the addition of GIS data, including geo-spatial data and other attribution such as Pipeline Integrity, DREAMS, or HPPD. Development (strategy) and potential implementation of new reporting organization

**Project Justification:**

Provide integrated data for analysis in managing compliance, asset maintenance and planning, integrity management and reporting.

*Note: Totals may include rounding differences.*



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00776.0  
Category: G. Gas Distribution  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00776G - PT15820 SCG Maintenance and Inspection Compliance Reporting

**Forecast Methodology:**

**Labor - Zero-Based**

Based on internal labor hours estimation

**Non-Labor - Zero-Based**

Based on vendor estimations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00776G**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: G. Gas Distribution  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776G - PT15820 SCG Maintenance and Inspection Compliance Reporting  
 Workpaper Detail: 00776G.001 - Provide integrated data for analysis in managing compliance, asset maintenance and plan  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |              |              |
|--------------------------|--------------|----------|--------------|--------------|
| Years                    |              | 2014     | 2015         | 2016         |
| Labor                    |              | 0        | 186          | 186          |
| Non-Labor                |              | 0        | 1,000        | 1,000        |
| NSE                      |              | 0        | 0            | 0            |
|                          | <b>Total</b> | <b>0</b> | <b>1,186</b> | <b>1,186</b> |
| FTE                      |              | 0.0      | 1.8          | 1.8          |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00776H - PT15821 Field Force Reporting**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: G. Gas Distribution  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776H - PT15821 Field Force Reporting

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |              |      |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|--------------|------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015         | 2016 |
| <b>Years</b>    |            |                   |          |          |          |          |                   |              |      |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 93           |      |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 1,050        |      |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0            |      |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>1,143</b> |      |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.9          |      |

**Business Purpose:**

This project will expand operational compliance related reporting for Gas and Electric Distribution and Measurement & Regulation Control Environment. It will enable the business to identify trends and adjust and correct field force assignments and resources to support operational compliance and goals.

**Physical Description:**

This project has two tracks. Track 1 will utilize Click Analyze and create Operational Performance Reports using primarily Click data. Track 2 will deliver Operational compliance reporting using SAP and Click data.

**Project Justification:**

This project will support operational compliance. In addition, the new reporting will improve the ability to identify potential efficiencies in operations in the field.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00776.0  
Category: G. Gas Distribution  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00776H - PT15821 Field Force Reporting

**Forecast Methodology:**

**Labor - Zero-Based**

Based on internal labor hours estimation

**Non-Labor - Zero-Based**

Based on vendor estimations.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00776H**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: G. Gas Distribution  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776H - PT15821 Field Force Reporting  
 Workpaper Detail: 00776H.001 - This project will expand operational compliance related reporting for Gas and Electric  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |          |              |  |
|--------------------------|--------------|----------|----------|--------------|--|
| Years                    |              | 2014     | 2015     | 2016         |  |
| Labor                    |              | 0        | 0        | 93           |  |
| Non-Labor                |              | 0        | 0        | 1,050        |  |
| NSE                      |              | 0        | 0        | 0            |  |
|                          | <b>Total</b> | <b>0</b> | <b>0</b> | <b>1,143</b> |  |
| FTE                      |              | 0.0      | 0.0      | 0.9          |  |

*Note: Totals may include rounding differences.*



**Beginning of Workpaper Group**  
**00776N - PT16802 Click v8 Functional Enhancements**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: G. Gas Distribution  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776N - PT16802 Click v8 Functional Enhancements

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |              | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |              |
|-----------------|--------------|-------------------|----------|----------|----------|----------|-------------------|----------|--------------|
|                 |              | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016         |
|                 | <b>Years</b> |                   |          |          |          |          |                   |          |              |
| Labor           | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 2,784        |
| Non-Labor       | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 600          |
| NSE             | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0            |
|                 | <b>Total</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>0</b> | <b>3,384</b> |
| FTE             | Zero-Based   | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.0      | 27.2         |

**Business Purpose:**

To address issues and provide additional enhancements as an outcome of and to the Click Version 8 Upgrade

**Physical Description:**

To address issues and provide additional enhancements as an outcome of and to the Click Version 8 Upgrade

**Project Justification:**

To address issues and provide additional enhancements as an outcome of and to the Click Version 8 Upgrade

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00776.0  
Category: G. Gas Distribution  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00776N - PT16802 Click v8 Functional Enhancements

**Forecast Methodology:**

**Labor - Zero-Based**

Forecast is based in historical labor hours estimates

**Non-Labor - Zero-Based**

Forecast is based in historical vendor estimates

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00776N**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: G. Gas Distribution  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776N - PT16802 Click v8 Functional Enhancements  
 Workpaper Detail: 00776N.001 - Click v8 Functional Enhancements  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |          |          |              |  |
|--------------------------|----------|----------|--------------|--|
| Years                    | 2014     | 2015     | 2016         |  |
| Labor                    | 0        | 0        | 1,392        |  |
| Non-Labor                | 0        | 0        | 300          |  |
| NSE                      | 0        | 0        | 0            |  |
| <b>Total</b>             | <b>0</b> | <b>0</b> | <b>1,692</b> |  |
| FTE                      | 0.0      | 0.0      | 13.6         |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: G. Gas Distribution  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776N - PT16802 Click v8 Functional Enhancements  
 Workpaper Detail: 00776N.002 - Click v8 Functional Enhancements  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |          |          |              |  |
|--------------------------|----------|----------|--------------|--|
| Years                    | 2014     | 2015     | 2016         |  |
| Labor                    | 0        | 0        | 1,392        |  |
| Non-Labor                | 0        | 0        | 300          |  |
| NSE                      | 0        | 0        | 0            |  |
| <b>Total</b>             | <b>0</b> | <b>0</b> | <b>1,692</b> |  |
| FTE                      | 0.0      | 0.0      | 13.6         |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**007760 - PT81431 Click M&I M&R Stabilization**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: G. Gas Distribution  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776O - PT81431 Click M&I M&R Stabilization

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |          |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 213               | 0        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 613               | 0        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>826</b>        | <b>0</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 2.1               | 0.0      | 0.0      |

**Business Purpose:**

The Click M&I and M&R Stabilization project addresses a number of key compliance and reliability based enhancements designated against the Field Force systems (Click Mobile and Schedule). This project includes 57 System Investigation Requests (SIRS) in which the vendor, Click Software, will be involved for development and testing. Additionally, the Click M&I and M&R Stabilization project includes an evaluation and tuning of Click Schedule's Background Optimizer that automatically builds routes based on specific business objectives such as minimizing travel time, pre-sorting tasks by map page and priority, etc.

**Physical Description:**

Various validation messages and data adjustments have been added to enable compliance and avoid compliance risk  
 Updated Lat / Long lookup service to give accurate locations  
 Added validation messages to give user awareness of tasks that will be unscheduled as a result of their non-availabilities  
 Updated various work type skill qualifications  
 Switch Plan IDs are sent to mobile regardless of status  
 Added the ability to automatically screen capture and send mobile forms as they are completed to the middle tier  
 Various updates to mobile form validations to ensure correct inputs  
 Added missing values on the design and model pick lists  
 Added ability to switch between Action Required and Completed statuses to prevent loss of data entry  
 Added additional map and location information to general work details  
 Added the ability to high light rows within the audit trail and increasing the size of fonts  
 Added validation messages to ensure completions are truly intended  
 Background Optimizer agent will be tuned and adjusted per user community requirements

**Project Justification:**

Various enhancements will also be introduced that will improve the Field Force applications (SAP-PM, Click Schedule, Click Mobile) such as reducing key strokes, simplifying data entry processes for field technicians, Area Resource Scheduling Advisors, and Dispatchers, reduce manual scheduling processes, and eliminating multiple logins for mobile users. Additional and updated validations in Click Mobile will increase the accuracy of data entry and reduce back office corrective activity. Categorically, the project includes productivity, data integrity, as well Click Schedule and Mobile user interface enhancements.

*Note: Totals may include rounding differences.*



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00776.0  
Category: G. Gas Distribution  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00776O - PT81431 Click M&I M&R Stabilization

**Forecast Methodology:**

**Labor - Zero-Based**

Project is currently in progress and scheduled to be complete 3Q 2014.

**Non-Labor - Zero-Based**

Project is currently in progress and scheduled to be complete 3Q 2014.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 007760**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: G. Gas Distribution  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776O - PT81431 Click M&I M&R Stabilization  
 Workpaper Detail: 00776O.001 - Click M&I M&R Stabilization  
 In-Service Date: 06/30/2014  
 Description:

| Forecast In 2013 \$(000) |            |          |          |  |
|--------------------------|------------|----------|----------|--|
| Years                    | 2014       | 2015     | 2016     |  |
| Labor                    | 213        | 0        | 0        |  |
| Non-Labor                | 613        | 0        | 0        |  |
| NSE                      | 0          | 0        | 0        |  |
| <b>Total</b>             | <b>826</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 2.1        | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00776Q - PT81428 SCG M&I GuiXT Phase 2**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: G. Gas Distribution  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776Q - PT81428 SCG M&I GuiXT Phase 2

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |          |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 197               | 0        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 737               | 0        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>934</b>        | <b>0</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 1.9               | 0.0      | 0.0      |

**Business Purpose:**

AP Plant Maintenance (PM) is used for all SCG Gas Distribution mandated inspection and maintenance work. One of the challenges identified in the initial implementation was the complexity of the native SAP interface for business users. The objective of this project is to simplify the SAP interface for back-end users to reduce the number of errors, simplify and reduce required training and support, and increase user efficiency. This project is the 2nd phase of a program started in 2012 and will complete the implementation of the GuiXT application for the highest priority roles in SCG Gas Distribution. The project will include the development and implementation of a graphical user interface in SAP PM, M&I, for 3 specified user roles, Dispatch Specialist, System Protection Clerk and Maintenance Planner. The resulting design will be consistent, both technically and functionally with the GuiXT solution implemented for SCG Gas Distribution in 2012 and the roles being implemented for the SAP CPD project.

**Physical Description:**

The GUI will streamline routine processes by providing user-friendly navigation screens that combine multiple screens to one and limit data displayed to only that required by the selected function. The GUI will simplify report generation by providing a "menu" of routine reports. The appropriate T-codes and variants are pre-selected and the user is required to enter parameter such as location and date range to generate the report. Functionality that allows easy exporting to Microsoft Excel format is also provided. The GUI will allow order generation against a specific asset, limited to order types valid for that asset. Order creation will be a "one touch" process and will require data entry limited to 1 to 3 data fields. The GUI will streamline training by reducing the number of screen navigation points and simplify data entry.

**Project Justification:**

Implementation of a user interface for SAP users that provides the following; A single "launch pad" for the specified role rather than the numerous required SAP transactions. Consolidation of multiple data entry screens into one screen to eliminate unnecessary and confusing options. Automated validation on data entry to ensure complete and accurate compliance data. The simplified interface and the data entry validation provide for a user experience that is more intuitive and results in a reduction of training, including refresher training and simplified user job aides. Improved data quality of compliance inspection & maintenance history. Errors introduced by users can result in a "false" non-compliance. Subsequent to the PG&E San Bruno incident, fines associated with this type of documented non-compliance can be over \$10M. Reducing the potential for this type of error, reduces the associated risk of incurring this type of fine.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00776.0  
Category: G. Gas Distribution  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00776Q - PT81428 SCG M&I GuiXT Phase 2

**Forecast Methodology:**

**Labor - Zero-Based**

This project is scheduled to be completed 3Q 2014.

**Non-Labor - Zero-Based**

This project is scheduled to be completed 3Q 2014.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00776Q**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: G. Gas Distribution  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776Q - PT81428 SCG M&I GuiXT Phase 2  
 Workpaper Detail: 00776Q.001 - SCG M&I GuiXT Phase 2  
 In-Service Date: 12/31/2014  
 Description:

| Forecast In 2013 \$(000) |            |          |          |  |
|--------------------------|------------|----------|----------|--|
| Years                    | 2014       | 2015     | 2016     |  |
| Labor                    | 197        | 0        | 0        |  |
| Non-Labor                | 737        | 0        | 0        |  |
| NSE                      | 0          | 0        | 0        |  |
| <b>Total</b>             | <b>934</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 1.9        | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*



**Beginning of Workpaper Group**  
**00786A - PT14810 - Gas Operations Performance Analytics (GOPA) Phase 2**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00786.0  
 Category: G. Gas Distribution  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00786A - PT14810 - Gas Operations Performance Analytics (GOPA) Phase 2

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |           |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|-----------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015      | 2016     |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 524               | 17        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 1,714             | 1         | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0         | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>2,238</b>      | <b>18</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 5.1               | 0.2       | 0.0      |

**Business Purpose:**

Establish a reporting and analytics platform that provides GOS and MRC Staffs with significantly improved data analysis & reporting capabilities. Information can be pulled by GOS and MRC Staffs on-demand rather than having to rely on IT support. GOS/MRC analysts will be able to browse rich and deep data sets in a real-time and efficient manner. This self-service platform will consist of user-friendly reporting and data analysis tools based on the SAP Business Objects and HANA platforms.

This project will also define and implement standardized business processes and best practices across all Districts for identifying areas for improvement, validating effectiveness of process and technology enhancements, and providing uniform measurement tools and monitoring practices across Regions

**Physical Description:**

Analysis and reporting self-service platform that enables GOS/MRC Staffs to analyze information, create and run reports on-demand

Processes, hands-on training, and job aids that enable/facilitate the use of the reporting/analysis platform by GOS/MRC Staffs and Super Users

Ability to assess and monitor data quality of data sets

**Project Justification:**

Manual and duplicate efforts involved with data gathering, analysis, and reporting are eliminated

As a result of this project there will be a cost avoidance of \$233K direct per year by not hiring 1 full time FTE supporting Distribution, 1 full time FTE supporting M&R, and 0.5 FTE for DART data maintenance (or other repository)

The new system will provide access to real-time, detailed, and accurate productivity data to various levels of management

Users of the system will be able to analyze rich and complex data sets from separate systems to identify areas for improvement

Greater business insight, more informed decision making, and performance monitoring, allow identification and correction of trends before they become issues.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00786.0  
Category: G. Gas Distribution  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00786A - PT14810 - Gas Operations Performance Analytics (GOPA) Phase 2

**Forecast Methodology:**

**Labor - Zero-Based**

The forecast is based upon the current project timeline.

**Non-Labor - Zero-Based**

The forecast is based upon the current project timeline.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00786A**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00786.0  
 Category: G. Gas Distribution  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00786A - PT14810 - Gas Operations Performance Analytics (GOPA) Phase 2  
 Workpaper Detail: 00786A.001 - Gas Distribution Analytics Phase 2  
 In-Service Date: 01/31/2015  
 Description:

| Forecast In 2013 \$(000) |              |           |          |  |
|--------------------------|--------------|-----------|----------|--|
| Years                    | 2014         | 2015      | 2016     |  |
| Labor                    | 524          | 17        | 0        |  |
| Non-Labor                | 1,289        | 1         | 0        |  |
| NSE                      | 0            | 0         | 0        |  |
| <b>Total</b>             | <b>1,813</b> | <b>18</b> | <b>0</b> |  |
| FTE                      | 5.1          | 0.2       | 0.0      |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00786.0  
 Category: G. Gas Distribution  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00786A - PT14810 - Gas Operations Performance Analytics (GOPA) Phase 2  
 Workpaper Detail: 00786A.002 - Gas Distribution Analytics Phase 2  
 In-Service Date: 01/31/2015  
 Description:

| Forecast In 2013 \$(000) |            |          |          |  |
|--------------------------|------------|----------|----------|--|
| Years                    | 2014       | 2015     | 2016     |  |
| Labor                    | 0          | 0        | 0        |  |
| Non-Labor                | 425        | 0        | 0        |  |
| NSE                      | 0          | 0        | 0        |  |
| <b>Total</b>             | <b>425</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 0.0        | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00810A - PTCPD SCG CPD Enh Phase 2**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00810.0  
 Category: G. Gas Distribution  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00810A - PTCPD SCG CPD Enh Phase 2

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |              |              |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|--------------|--------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015         | 2016         |
| Years           |            |                   |          |          |          |          |                   |              |              |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 3,411        | 1,867        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 1,320        | 1,635        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0            | 0            |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>4,731</b> | <b>3,502</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 33.5         | 18.3         |

**Business Purpose:**

This project is necessary to complete remaining CPD deployments for SDG&E and SCG throughout 2014. Activities to be performed relating to future deployments include training, data conversion, system configuration, and storm period support including defect resolution.

In addition to completing remaining deployments, the project team will complete many defects and system enhancements. Currently, there are approximately 450 prioritized enhancements. Many of these enhancements will be completed as part of the CPD2 project during 2014. A CPD Enhancement Phase 2 project is likely to be recommended for 2015. See Appendix B for details on enhancement scope. The following are the assumptions of this business case:

All deployments and enhancements will be completed during 2014 except for GWD electric.

This scenario assumes that full GWD electric deployment is delayed and will be completed during early 2015.

Funding for GWD electric deployment and enhancements is through June 30, 2015. SAP/Click deployments and enhancements will be completed by December 31, 2014.

It is likely that 2015 funding will be requested for SAP and Click enhancements.

**Physical Description:**

The following enhancements are in scope for CPD:

Automating the work order authorization (WOA) Approval Process

Simplifying field memos for SDG&E supervisors

Adding upfront validations during planning to ensure proper accounting treatment are selected (capital and O&M splits)

Increasing Area Resource Scheduling (ARSO) usability of tracking schedule dependencies between work requests

Allowing planners to easily account for large field changes on construction projects

Ease of use enhancements (data entry, screen consolidations, screen drop downs, etc.)

OMS/SAP interface

Improve performance of accounting month-end closing programs

Perform changes necessary to adopt FAM project processes

**Project Justification:**

Completion of this project is necessary to derive benefits identified in the business case for CPD project and to avoid incremental new costs. This project will also provide enhancements necessary to support DIMP and CP10 compliance programs and DOT reporting.

*Note: Totals may include rounding differences.*



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00810.0  
Category: G. Gas Distribution  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00810A - PTCPD SCG CPD Enh Phase 2

**Forecast Methodology:**

**Labor - Zero-Based**

The forecast is based upon the current project timeline.

**Non-Labor - Zero-Based**

The forecast is based upon the current project timeline.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00810A**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00810.0  
 Category: G. Gas Distribution  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00810A - PTCPD SCG CPD Enh Phase 2  
 Workpaper Detail: 00810A.001 - CPD project after the deployment additional new and necessary enhancements are required  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |              |              |  |
|--------------------------|--------------|----------|--------------|--------------|--|
| Years                    |              | 2014     | 2015         | 2016         |  |
| Labor                    |              | 0        | 3,138        | 1,717        |  |
| Non-Labor                |              | 0        | 1,214        | 1,505        |  |
| NSE                      |              | 0        | 0            | 0            |  |
|                          | <b>Total</b> | <b>0</b> | <b>4,352</b> | <b>3,222</b> |  |
| FTE                      |              | 0.0      | 30.8         | 16.8         |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00810.0  
 Category: G. Gas Distribution  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00810A - PTCPD SCG CPD Enh Phase 2  
 Workpaper Detail: 00810A.002 - CPD project after the deployment additional new and necessary enhancements are required  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |            |            |  |
|--------------------------|--------------|----------|------------|------------|--|
| Years                    |              | 2014     | 2015       | 2016       |  |
| Labor                    |              | 0        | 273        | 150        |  |
| Non-Labor                |              | 0        | 106        | 130        |  |
| NSE                      |              | 0        | 0          | 0          |  |
|                          | <b>Total</b> | <b>0</b> | <b>379</b> | <b>280</b> |  |
| FTE                      |              | 0.0      | 2.7        | 1.5        |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00810B - PT13810 SCG CPD Enh Phase 1**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00810.0  
 Category: G. Gas Distribution  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00810B - PT13810 SCG CPD Enh Phase 1

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |              |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|--------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015         | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |              |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 2,566             | 35           | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 8,913             | 1,050        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0            | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>11,479</b>     | <b>1,085</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 25.2              | 0.3          | 0.0      |

**Business Purpose:**

This project is necessary to complete remaining CPD deployments for SDG&E and SCG throughout 2014. Activities to be performed relating to future deployments include training, data conversion, system configuration, and storm period support including defect resolution.

In addition to completing remaining deployments, the project team will complete many defects and system enhancements. Currently, there are approximately 450 prioritized enhancements. Many of these enhancements will be completed as part of the CPD2 project during 2014. A CPD Enhancement Phase 2 project is likely to be recommended for 2015. See Appendix B for details on enhancement scope. The following are the assumptions of this business case:

All deployments and enhancements will be completed during 2014 except for GWD electric.

This scenario assumes that full GWD electric deployment is delayed and will be completed during early 2015.

Funding for GWD electric deployment and enhancements is through June 30, 2015. SAP/Click deployments and enhancements will be completed by December 31, 2014.

It is likely that 2015 funding will be requested for SAP and Click enhancements.

**Physical Description:**

The following enhancements are in scope for CPD:

Automating the work order authorization (WOA) Approval Process

Simplifying field memos for SDG&E supervisors

Adding upfront validations during planning to ensure proper accounting treatment are selected (capital and O&M splits)

Increasing Area Resource Scheduling (ARSO) usability of tracking schedule dependencies between work requests

Allowing planners to easily account for large field changes on construction projects

Ease of use enhancements (data entry, screen consolidations, screen drop downs, etc.)

OMS/SAP interface

Improve performance of accounting month-end closing programs

Perform changes necessary to adopt FAM project processes

**Project Justification:**

Completion of this project is necessary to derive benefits identified in the business case for CPD project and to avoid incremental new costs. This project will also provide enhancements necessary to support DIMP and CP10 compliance programs and DOT reporting.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00810.0  
Category: G. Gas Distribution  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00810B - PT13810 SCG CPD Enh Phase 1

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00810B**



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00810.0  
 Category: G. Gas Distribution  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00810B - PT13810 SCG CPD Enh Phase 1  
 Workpaper Detail: 00810B.001 - SCG CPD Enh Phase 1  
 In-Service Date: 03/31/2015  
 Description:

| Forecast In 2013 \$(000) |              |               |              |          |  |
|--------------------------|--------------|---------------|--------------|----------|--|
| Years                    |              | 2014          | 2015         | 2016     |  |
| Labor                    |              | 2,566         | 35           | 0        |  |
| Non-Labor                |              | 8,913         | 1,050        | 0        |  |
| NSE                      |              | 0             | 0            | 0        |  |
|                          | <b>Total</b> | <b>11,479</b> | <b>1,085</b> | <b>0</b> |  |
| FTE                      |              | 25.2          | 0.3          | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00777E - PT81454 SCG Field MDT Upgrade 2013**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00777.0  
 Category: G. Gas Distribution  
 Category-Sub: 10. Growth/Capacity  
 Workpaper Group: 00777E - PT81454 SCG Field MDT Upgrade 2013

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016     |
| Years           |            |                   |          |          |          |          |                   |          |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 2,869             | 0        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>2,869</b>      | <b>0</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.0      | 0.0      |

**Business Purpose:**

Upgrade SCG Field MDTs hardware

**Physical Description:**

Purchased 418 MDT located in Field Services

**Project Justification:**

Upgrade SCG Field MDTs hardware, as well as the operating systems with to Windows 7

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00777.0  
Category: G. Gas Distribution  
Category-Sub: 10. Growth/Capacity  
Workpaper Group: 00777E - PT81454 SCG Field MDT Upgrade 2013

**Forecast Methodology:**

**Labor - Zero-Based**

This project was completed in Q1 of 2014. These are the actuals.

**Non-Labor - Zero-Based**

This project was completed in Q1 of 2014. These are the actuals.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00777E**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00777.0  
 Category: G. Gas Distribution  
 Category-Sub: 10. Growth/Capacity  
 Workpaper Group: 00777E - PT81454 SCG Field MDT Upgrade 2013  
 Workpaper Detail: 00777E.001 - SCG Field MDT Upgrade 2013  
 In-Service Date: 03/31/2014  
 Description:

| Forecast In 2013 \$(000) |              |          |          |  |
|--------------------------|--------------|----------|----------|--|
| Years                    | 2014         | 2015     | 2016     |  |
| Labor                    | 0            | 0        | 0        |  |
| Non-Labor                | 2,244        | 0        | 0        |  |
| NSE                      | 0            | 0        | 0        |  |
| <b>Total</b>             | <b>2,244</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 0.0          | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00777.0  
 Category: G. Gas Distribution  
 Category-Sub: 10. Growth/Capacity  
 Workpaper Group: 00777E - PT81454 SCG Field MDT Upgrade 2013  
 Workpaper Detail: 00777E.002 - SCG Field MDT OS Upgrade 2013  
 In-Service Date: 03/31/2014  
 Description:

| Forecast In 2013 \$(000) |            |          |          |  |
|--------------------------|------------|----------|----------|--|
| Years                    | 2014       | 2015     | 2016     |  |
| Labor                    | 0          | 0        | 0        |  |
| Non-Labor                | 625        | 0        | 0        |  |
| NSE                      | 0          | 0        | 0        |  |
| <b>Total</b>             | <b>625</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 0.0        | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Category: H. Information Technology  
Workpaper: VARIOUS

**Summary for Category: H. Information Technology**

|              | In 2013\$ (000)   |                   |               |               |
|--------------|-------------------|-------------------|---------------|---------------|
|              | Adjusted-Recorded | Adjusted-Forecast |               |               |
|              | 2013              | 2014              | 2015          | 2016          |
| Labor        | 0                 | 8,741             | 12,908        | 13,930        |
| Non-Labor    | 0                 | 39,956            | 55,765        | 53,173        |
| NSE          | 0                 | 0                 | 0             | 0             |
| <b>Total</b> | <b>0</b>          | <b>48,697</b>     | <b>68,673</b> | <b>67,103</b> |
| FTE          | 0.0               | 86.0              | 126.8         | 136.5         |

**00760B PT15824 SCG Desktop Hardware Refresh**

|              |          |          |          |              |
|--------------|----------|----------|----------|--------------|
| Labor        | 0        | 0        | 0        | 432          |
| Non-Labor    | 0        | 0        | 0        | 6,640        |
| NSE          | 0        | 0        | 0        | 0            |
| <b>Total</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>7,072</b> |
| FTE          | 0.0      | 0.0      | 0.0      | 4.2          |

**00760C PT15868 SE 2015 Mainframe Expansion**

|              |          |          |          |              |
|--------------|----------|----------|----------|--------------|
| Labor        | 0        | 0        | 0        | 0            |
| Non-Labor    | 0        | 0        | 0        | 1,818        |
| NSE          | 0        | 0        | 0        | 0            |
| <b>Total</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1,818</b> |
| FTE          | 0.0      | 0.0      | 0.0      | 0.0          |

**00760D PT16934 eGRC Infrastructure Refresh**

|              |          |          |          |              |
|--------------|----------|----------|----------|--------------|
| Labor        | 0        | 0        | 0        | 190          |
| Non-Labor    | 0        | 0        | 0        | 1,800        |
| NSE          | 0        | 0        | 0        | 0            |
| <b>Total</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1,990</b> |
| FTE          | 0.0      | 0.0      | 0.0      | 1.9          |

**00760F PT81440 Data Center Network Core**

|              |          |              |          |          |
|--------------|----------|--------------|----------|----------|
| Labor        | 0        | 280          | 0        | 0        |
| Non-Labor    | 0        | 853          | 0        | 0        |
| NSE          | 0        | 0            | 0        | 0        |
| <b>Total</b> | <b>0</b> | <b>1,133</b> | <b>0</b> | <b>0</b> |
| FTE          | 0.0      | 2.7          | 0.0      | 0.0      |

**00762A PT14872 SCG 2014 Active Directory Refresh**

|              |          |          |            |          |
|--------------|----------|----------|------------|----------|
| Labor        | 0        | 0        | 139        | 0        |
| Non-Labor    | 0        | 0        | 726        | 0        |
| NSE          | 0        | 0        | 0          | 0        |
| <b>Total</b> | <b>0</b> | <b>0</b> | <b>865</b> | <b>0</b> |
| FTE          | 0.0      | 0.0      | 1.4        | 0.0      |

Note: Totals may include rounding differences.



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Category: H. Information Technology  
Workpaper: VARIOUS

|  | In 2013\$ (000)   |                   |              |              |
|--|-------------------|-------------------|--------------|--------------|
|  | Adjusted-Recorded | Adjusted-Forecast |              |              |
|  | 2013              | 2014              | 2015         | 2016         |
| <b>00762B PT81355 SCG WAN REBUILD PH IV</b>                                    |                   |                   |              |              |
| Labor  | 0                 | 261               | 0            | 0            |
| Non-Labor  | 0                 | 517               | 0            | 0            |
| NSE  | 0                 | 0                 | 0            | 0            |
| <b>Total</b>   | <b>0</b>          | <b>778</b>        | <b>0</b>     | <b>0</b>     |
| FTE  | 0.0               | 2.6               | 0.0          | 0.0          |
| <b>00762C PT81442 SE Network Attached Storage (NAS) Replacement</b>            |                   |                   |              |              |
| Labor  | 0                 | 128               | 0            | 0            |
| Non-Labor  | 0                 | 1,020             | 0            | 0            |
| NSE  | 0                 | 0                 | 0            | 0            |
| <b>Total</b>   | <b>0</b>          | <b>1,148</b>      | <b>0</b>     | <b>0</b>     |
| FTE  | 0.0               | 1.3               | 0.0          | 0.0          |
| <b>00762D PT81443 SEu Wireless/Sempra Virtual Office Upgrade and Expansion</b> |                   |                   |              |              |
| Labor  | 0                 | 269               | 0            | 0            |
| Non-Labor  | 0                 | 393               | 0            | 0            |
| NSE  | 0                 | 0                 | 0            | 0            |
| <b>Total</b>   | <b>0</b>          | <b>662</b>        | <b>0</b>     | <b>0</b>     |
| FTE  | 0.0               | 2.6               | 0.0          | 0.0          |
| <b>00764I PT16813 CIS Frontend Architecture Optimization</b>                   |                   |                   |              |              |
| Labor  | 0                 | 0                 | 0            | 1,044        |
| Non-Labor  | 0                 | 0                 | 0            | 500          |
| NSE  | 0                 | 0                 | 0            | 0            |
| <b>Total</b>   | <b>0</b>          | <b>0</b>          | <b>0</b>     | <b>1,544</b> |
| FTE  | 0.0               | 0.0               | 0.0          | 10.2         |
| <b>00768A PT14854 SAP ECC and BI Archiving</b>                                 |                   |                   |              |              |
| Labor  | 0                 | 294               | 0            | 0            |
| Non-Labor  | 0                 | 508               | 0            | 0            |
| NSE  | 0                 | 0                 | 0            | 0            |
| <b>Total</b>   | <b>0</b>          | <b>802</b>        | <b>0</b>     | <b>0</b>     |
| FTE  | 0.0               | 2.9               | 0.0          | 0.0          |
| <b>00768B PT14855 Business Objects Upgrade</b>                                 |                   |                   |              |              |
| Labor  | 0                 | 0                 | 348          | 0            |
| Non-Labor  | 0                 | 0                 | 300          | 0            |
| NSE  | 0                 | 0                 | 0            | 0            |
| <b>Total</b>   | <b>0</b>          | <b>0</b>          | <b>648</b>   | <b>0</b>     |
| FTE  | 0.0               | 0.0               | 3.4          | 0.0          |
| <b>00770A PT14834 SEu Web-Audio Conferencing and Instant Messaging Refresh</b> |                   |                   |              |              |
| Labor  | 0                 | 70                | 139          | 0            |
| Non-Labor  | 0                 | 194               | 950          | 0            |
| NSE  | 0                 | 0                 | 0            | 0            |
| <b>Total</b>   | <b>0</b>          | <b>264</b>        | <b>1,089</b> | <b>0</b>     |
| FTE  | 0.0               | 0.7               | 1.4          | 0.0          |

Note: Totals may include rounding differences.

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Category: H. Information Technology  
Workpaper: VARIOUS

|   | In 2013\$ (000)   |                   |              |            |
|---|-------------------|-------------------|--------------|------------|
|   | Adjusted-Recorded | Adjusted-Forecast |              |            |
|   | 2013              | 2014              | 2015         | 2016       |
| <b>00770AB PT81316 WINDOWS 7 PLATFORM REPLACEMENT (W7U)</b> |                   |                   |              |            |
| Labor   | 0                 | 408               | 0            | 0          |
| Non-Labor   | 0                 | 1,001             | 0            | 0          |
| NSE   | 0                 | 0                 | 0            | 0          |
| <b>Total</b>  | <b>0</b>          | <b>1,409</b>      | <b>0</b>     | <b>0</b>   |
| FTE   | 0.0               | 4.0               | 0.0          | 0.0        |
| <b>00770AC PT81416 ENTERPRISE MESSAGING INFRASTRUCTURE</b>  |                   |                   |              |            |
| Labor   | 0                 | 244               | 0            | 0          |
| Non-Labor   | 0                 | 734               | 0            | 0          |
| NSE   | 0                 | 0                 | 0            | 0          |
| <b>Total</b>  | <b>0</b>          | <b>978</b>        | <b>0</b>     | <b>0</b>   |
| FTE   | 0.0               | 2.4               | 0.0          | 0.0        |
| <b>00770AD PT81417 EDIX Enhancement - Phase 2</b>           |                   |                   |              |            |
| Labor   | 0                 | 367               | 123          | 0          |
| Non-Labor   | 0                 | 30                | 0            | 0          |
| NSE   | 0                 | 0                 | 0            | 0          |
| <b>Total</b>  | <b>0</b>          | <b>397</b>        | <b>123</b>   | <b>0</b>   |
| FTE   | 0.0               | 3.6               | 1.2          | 0.0        |
| <b>00770AE PT81426 SERVER REPLACEMENT-AIX RETIREMENT</b>    |                   |                   |              |            |
| Labor   | 0                 | 502               | 227          | 0          |
| Non-Labor   | 0                 | 1,849             | 320          | 0          |
| NSE   | 0                 | 0                 | 0            | 0          |
| <b>Total</b>  | <b>0</b>          | <b>2,351</b>      | <b>547</b>   | <b>0</b>   |
| FTE   | 0.0               | 4.9               | 2.2          | 0.0        |
| <b>00770AF PT81433 Enterprise Voice System Refresh</b>      |                   |                   |              |            |
| Labor   | 0                 | 119               | 0            | 0          |
| Non-Labor   | 0                 | 95                | 0            | 0          |
| NSE   | 0                 | 0                 | 0            | 0          |
| <b>Total</b>  | <b>0</b>          | <b>214</b>        | <b>0</b>     | <b>0</b>   |
| FTE   | 0.0               | 1.2               | 0.0          | 0.0        |
| <b>00770AG ROWS Refresh Out of Warranty Servers.</b>        |                   |                   |              |            |
| Labor   | 0                 | 648               | 710          | 295        |
| Non-Labor   | 0                 | 3,872             | 1,084        | 400        |
| NSE   | 0                 | 0                 | 0            | 0          |
| <b>Total</b>  | <b>0</b>          | <b>4,520</b>      | <b>1,794</b> | <b>695</b> |
| FTE   | 0.0               | 6.4               | 7.0          | 2.9        |
| <b>00770AH PT201410 SEu Call Recording Replacement</b>      |                   |                   |              |            |
| Labor   | 0                 | 136               | 0            | 0          |
| Non-Labor   | 0                 | 650               | 0            | 0          |
| NSE   | 0                 | 0                 | 0            | 0          |
| <b>Total</b>  | <b>0</b>          | <b>786</b>        | <b>0</b>     | <b>0</b>   |
| FTE   | 0.0               | 1.3               | 0.0          | 0.0        |

Note: Totals may include rounding differences.

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|                   |                   | In 2013\$ (000) |      |  |
|-------------------|-------------------|-----------------|------|--|
| Adjusted-Recorded | Adjusted-Forecast |                 |      |  |
| 2013              | 2014              | 2015            | 2016 |  |

**00770AI PT201433 Backup Services Enhancement**

|              |          |            |          |          |
|--------------|----------|------------|----------|----------|
| Labor        | 0        | 99         | 0        | 0        |
| Non-Labor    | 0        | 750        | 0        | 0        |
| NSE          | 0        | 0          | 0        | 0        |
| <b>Total</b> | <b>0</b> | <b>849</b> | <b>0</b> | <b>0</b> |
| FTE          | 0.0      | 1.0        | 0.0      | 0.0      |

**00770B PT14835 Mobile Device Management Infrastructure**

|              |          |              |           |          |
|--------------|----------|--------------|-----------|----------|
| Labor        | 0        | 266          | 87        | 0        |
| Non-Labor    | 0        | 757          | 0         | 0        |
| NSE          | 0        | 0            | 0         | 0        |
| <b>Total</b> | <b>0</b> | <b>1,023</b> | <b>87</b> | <b>0</b> |
| FTE          | 0.0      | 2.6          | 0.9       | 0.0      |

**00770D PT14839 Logging Infrastructure Refresh**

|              |          |          |              |          |
|--------------|----------|----------|--------------|----------|
| Labor        | 0        | 0        | 144          | 0        |
| Non-Labor    | 0        | 0        | 2,625        | 0        |
| NSE          | 0        | 0        | 0            | 0        |
| <b>Total</b> | <b>0</b> | <b>0</b> | <b>2,769</b> | <b>0</b> |
| FTE          | 0.0      | 0.0      | 1.4          | 0.0      |

**00770E PT14846 Gas SCADA Perimeter Refresh**

|              |          |            |          |          |
|--------------|----------|------------|----------|----------|
| Labor        | 0        | 104        | 0        | 0        |
| Non-Labor    | 0        | 725        | 0        | 0        |
| NSE          | 0        | 0          | 0        | 0        |
| <b>Total</b> | <b>0</b> | <b>829</b> | <b>0</b> | <b>0</b> |
| FTE          | 0.0      | 1.0        | 0.0      | 0.0      |

**00770H PT14889 SEu Enterprise Call Recording Refresh**

|              |          |            |          |          |
|--------------|----------|------------|----------|----------|
| Labor        | 0        | 73         | 0        | 0        |
| Non-Labor    | 0        | 268        | 0        | 0        |
| NSE          | 0        | 0          | 0        | 0        |
| <b>Total</b> | <b>0</b> | <b>341</b> | <b>0</b> | <b>0</b> |
| FTE          | 0.0      | 0.7        | 0.0      | 0.0      |

**00770K PT15844 Web Application Firewall**

|              |          |          |          |              |
|--------------|----------|----------|----------|--------------|
| Labor        | 0        | 0        | 0        | 146          |
| Non-Labor    | 0        | 0        | 0        | 1,365        |
| NSE          | 0        | 0        | 0        | 0            |
| <b>Total</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1,511</b> |
| FTE          | 0.0      | 0.0      | 0.0      | 1.4          |

**00770L PT15874 Enterprise Risk and Compliance (eGRC) Archer expansion**

|              |          |          |          |            |
|--------------|----------|----------|----------|------------|
| Labor        | 0        | 0        | 0        | 515        |
| Non-Labor    | 0        | 0        | 0        | 144        |
| NSE          | 0        | 0        | 0        | 0          |
| <b>Total</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>659</b> |
| FTE          | 0.0      | 0.0      | 0.0      | 5.0        |

Note: Totals may include rounding differences.

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|--|-------------------|-------------------|--------------|--------------|
|  | Adjusted-Recorded | Adjusted-Forecast |              |              |
|  | 2013              | 2014              | 2015         | 2016         |
| <b>00770M PT15879 Enterprise Social Computing</b>                        |                   |                   |              |              |
| Labor  | 0                 | 0                 | 0            | 162          |
| Non-Labor  | 0                 | 0                 | 0            | 428          |
| NSE  | 0                 | 0                 | 0            | 0            |
| <b>Total</b>   | <b>0</b>          | <b>0</b>          | <b>0</b>     | <b>590</b>   |
| FTE  | 0.0               | 0.0               | 0.0          | 1.6          |
| <b>00770N PT15880 ITCS - App-V and UE-V</b>                              |                   |                   |              |              |
| Labor  | 0                 | 0                 | 348          | 696          |
| Non-Labor  | 0                 | 0                 | 260          | 600          |
| NSE  | 0                 | 0                 | 0            | 0            |
| <b>Total</b>   | <b>0</b>          | <b>0</b>          | <b>608</b>   | <b>1,296</b> |
| FTE  | 0.0               | 0.0               | 3.4          | 6.8          |
| <b>00770O PT15881 SCG Video-enabled Collaboration Room Upgrade</b>       |                   |                   |              |              |
| Labor  | 0                 | 0                 | 108          | 0            |
| Non-Labor  | 0                 | 0                 | 286          | 0            |
| NSE  | 0                 | 0                 | 0            | 0            |
| <b>Total</b>   | <b>0</b>          | <b>0</b>          | <b>394</b>   | <b>0</b>     |
| FTE  | 0.0               | 0.0               | 1.1          | 0.0          |
| <b>00770P PT15882 SEu TelePresence Upgrade</b>                           |                   |                   |              |              |
| Labor  | 0                 | 0                 | 107          | 0            |
| Non-Labor  | 0                 | 0                 | 990          | 0            |
| NSE  | 0                 | 0                 | 0            | 0            |
| <b>Total</b>   | <b>0</b>          | <b>0</b>          | <b>1,097</b> | <b>0</b>     |
| FTE  | 0.0               | 0.0               | 1.0          | 0.0          |
| <b>00770Q PT15890 SCG Infrastructure Rooms Compton Headquarter</b>       |                   |                   |              |              |
| Labor  | 0                 | 0                 | 0            | 52           |
| Non-Labor  | 0                 | 0                 | 0            | 65           |
| NSE  | 0                 | 0                 | 0            | 0            |
| <b>Total</b>   | <b>0</b>          | <b>0</b>          | <b>0</b>     | <b>117</b>   |
| FTE  | 0.0               | 0.0               | 0.0          | 0.5          |
| <b>00770R PT15896 SE SAN Storage Expansion</b>                           |                   |                   |              |              |
| Labor  | 0                 | 0                 | 0            | 52           |
| Non-Labor  | 0                 | 0                 | 0            | 6,000        |
| NSE  | 0                 | 0                 | 0            | 0            |
| <b>Total</b>   | <b>0</b>          | <b>0</b>          | <b>0</b>     | <b>6,052</b> |
| FTE  | 0.0               | 0.0               | 0.0          | 0.5          |
| <b>00770S PT15899 SE 2015 VMware View Virtual Desktop Infrastructure</b> |                   |                   |              |              |
| Labor  | 0                 | 0                 | 278          | 186          |
| Non-Labor  | 0                 | 0                 | 1,236        | 0            |
| NSE  | 0                 | 0                 | 0            | 0            |
| <b>Total</b>   | <b>0</b>          | <b>0</b>          | <b>1,514</b> | <b>186</b>   |
| FTE  | 0.0               | 0.0               | 2.7          | 1.8          |

Note: Totals may include rounding differences.

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|---|-------------------|-------------------|---------------|--------------|
|   | Adjusted-Recorded | Adjusted-Forecast |               |              |
|   | 2013              | 2014              | 2015          | 2016         |
| <b>00770T PT15900 SCG Infrastructure Rooms (Anaheim IDF/Server Room)</b>    |                   |                   |               |              |
| Labor   | 0                 | 0                 | 46            | 0            |
| Non-Labor   | 0                 | 0                 | 35            | 0            |
| NSE   | 0                 | 0                 | 0             | 0            |
| <b>Total</b>  | <b>0</b>          | <b>0</b>          | <b>81</b>     | <b>0</b>     |
| FTE   | 0.0               | 0.0               | 0.5           | 0.0          |
| <b>00770U PT16892A SE Infrastructure Enabling Services (DNS, DHCP, NTP)</b> |                   |                   |               |              |
| Labor   | 0                 | 0                 | 0             | 0            |
| Non-Labor   | 0                 | 0                 | 0             | 806          |
| NSE   | 0                 | 0                 | 0             | 0            |
| <b>Total</b>  | <b>0</b>          | <b>0</b>          | <b>0</b>      | <b>806</b>   |
| FTE   | 0.0               | 0.0               | 0.0           | 0.0          |
| <b>00770V PT16892B SE SCOM 2012 Upgrade</b>                                 |                   |                   |               |              |
| Labor   | 0                 | 0                 | 0             | 371          |
| Non-Labor   | 0                 | 0                 | 0             | 200          |
| NSE   | 0                 | 0                 | 0             | 0            |
| <b>Total</b>  | <b>0</b>          | <b>0</b>          | <b>0</b>      | <b>571</b>   |
| FTE   | 0.0               | 0.0               | 0.0           | 3.6          |
| <b>00770X PT16899B SE 2016 VMware View Virtual Desktop Infrastructure</b>   |                   |                   |               |              |
| Labor   | 0                 | 0                 | 0             | 232          |
| Non-Labor   | 0                 | 0                 | 0             | 2,400        |
| NSE   | 0                 | 0                 | 0             | 0            |
| <b>Total</b>  | <b>0</b>          | <b>0</b>          | <b>0</b>      | <b>2,632</b> |
| FTE   | 0.0               | 0.0               | 0.0           | 2.3          |
| <b>00772A PT14837 SCG Field Area Network</b>                                |                   |                   |               |              |
| Labor   | 0                 | 0                 | 2,144         | 1,429        |
| Non-Labor   | 0                 | 0                 | 15,730        | 0            |
| NSE   | 0                 | 0                 | 0             | 0            |
| <b>Total</b>  | <b>0</b>          | <b>0</b>          | <b>17,874</b> | <b>1,429</b> |
| FTE   | 0.0               | 0.0               | 21.0          | 14.0         |
| <b>00772B PT14849 SCG CI Small Cap</b>                                      |                   |                   |               |              |
| Labor   | 0                 | 0                 | 0             | 0            |
| Non-Labor   | 0                 | 500               | 500           | 500          |
| NSE   | 0                 | 0                 | 0             | 0            |
| <b>Total</b>  | <b>0</b>          | <b>500</b>        | <b>500</b>    | <b>500</b>   |
| FTE   | 0.0               | 0.0               | 0.0           | 0.0          |
| <b>00772D PT14851 SE Local Area Network Refresh</b>                         |                   |                   |               |              |
| Labor   | 0                 | 378               | 1,350         | 2,026        |
| Non-Labor   | 0                 | 2,100             | 2,100         | 2,138        |
| NSE   | 0                 | 0                 | 0             | 0            |
| <b>Total</b>  | <b>0</b>          | <b>2,478</b>      | <b>3,450</b>  | <b>4,164</b> |
| FTE   | 0.0               | 3.7               | 13.2          | 19.9         |

Note: Totals may include rounding differences.

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|   | In 2013\$ (000)   |                   |               |              |
|---|-------------------|-------------------|---------------|--------------|
|   | Adjusted-Recorded | Adjusted-Forecast |               |              |
|   | 2013              | 2014              | 2015          | 2016         |
| <b>00772G PT14871 SCG GAS SCADA convert</b>                 |                   |                   |               |              |
| Labor   | 0                 | 0                 | 0             | 347          |
| Non-Labor   | 0                 | 0                 | 0             | 1,152        |
| NSE   | 0                 | 0                 | 0             | 0            |
| <b>Total</b>  | <b>0</b>          | <b>0</b>          | <b>0</b>      | <b>1,499</b> |
| FTE   | 0.0               | 0.0               | 0.0           | 3.4          |
| <b>00772H PT15883 SE Converged Computing Infrastructure</b> |                   |                   |               |              |
| Labor   | 0                 | 0                 | 72            | 0            |
| Non-Labor   | 0                 | 0                 | 16,000        | 0            |
| NSE   | 0                 | 0                 | 0             | 0            |
| <b>Total</b>  | <b>0</b>          | <b>0</b>          | <b>16,072</b> | <b>0</b>     |
| FTE   | 0.0               | 0.0               | 0.8           | 0.0          |
| <b>00772I PT15884 SE Backup Systems</b>                     |                   |                   |               |              |
| Labor   | 0                 | 0                 | 0             | 2            |
| Non-Labor   | 0                 | 0                 | 0             | 700          |
| NSE   | 0                 | 0                 | 0             | 0            |
| <b>Total</b>  | <b>0</b>          | <b>0</b>          | <b>0</b>      | <b>702</b>   |
| FTE   | 0.0               | 0.0               | 0.0           | 0.1          |
| <b>00772J PT15891 SCG Communications Shelter</b>            |                   |                   |               |              |
| Labor   | 0                 | 0                 | 104           | 0            |
| Non-Labor   | 0                 | 0                 | 140           | 0            |
| NSE   | 0                 | 0                 | 0             | 0            |
| <b>Total</b>  | <b>0</b>          | <b>0</b>          | <b>244</b>    | <b>0</b>     |
| FTE   | 0.0               | 0.0               | 1.0           | 0.0          |
| <b>00772M PT15911 SCG Communications Shelter</b>            |                   |                   |               |              |
| Labor   | 0                 | 0                 | 8             | 0            |
| Non-Labor   | 0                 | 0                 | 375           | 0            |
| NSE   | 0                 | 0                 | 0             | 0            |
| <b>Total</b>  | <b>0</b>          | <b>0</b>          | <b>383</b>    | <b>0</b>     |
| FTE   | 0.0               | 0.0               | 0.1           | 0.0          |
| <b>00772O PT16891 2016 SCG Communication Shelter</b>        |                   |                   |               |              |
| Labor   | 0                 | 0                 | 0             | 21           |
| Non-Labor   | 0                 | 0                 | 0             | 800          |
| NSE   | 0                 | 0                 | 0             | 0            |
| <b>Total</b>  | <b>0</b>          | <b>0</b>          | <b>0</b>      | <b>821</b>   |
| FTE   | 0.0               | 0.0               | 0.0           | 0.2          |
| <b>00772P PT15893A SE Wide Area Network Refresh</b>         |                   |                   |               |              |
| Labor   | 0                 | 0                 | 0             | 464          |
| Non-Labor   | 0                 | 0                 | 0             | 4,000        |
| NSE   | 0                 | 0                 | 0             | 0            |
| <b>Total</b>  | <b>0</b>          | <b>0</b>          | <b>0</b>      | <b>4,464</b> |
| FTE   | 0.0               | 0.0               | 0.0           | 4.5          |

Note: Totals may include rounding differences.

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|---|-------------------|-------------------|--------------|--------------|
|   | Adjusted-Recorded | Adjusted-Forecast |              |              |
|   | 2013              | 2014              | 2015         | 2016         |
| <b>00772Q PT16893B SCG Communication Shelter (Box Springs)</b>      |                   |                   |              |              |
| Labor   | 0                 | 56                | 53           | 0            |
| Non-Labor   | 0                 | 89                | 140          | 0            |
| NSE   | 0                 | 0                 | 0            | 0            |
| <b>Total</b>  | <b>0</b>          | <b>145</b>        | <b>193</b>   | <b>0</b>     |
| FTE   | 0.0               | 0.5               | 0.5          | 0.0          |
| <b>00772R PT16894A SCG Private Network Expansion</b>                |                   |                   |              |              |
| Labor   | 0                 | 0                 | 0            | 348          |
| Non-Labor   | 0                 | 0                 | 0            | 1,800        |
| NSE   | 0                 | 0                 | 0            | 0            |
| <b>Total</b>  | <b>0</b>          | <b>0</b>          | <b>0</b>     | <b>2,148</b> |
| FTE   | 0.0               | 0.0               | 0.0          | 3.4          |
| <b>00772S PT16894B SCG Communication Shelters (Double Mountain)</b> |                   |                   |              |              |
| Labor   | 0                 | 56                | 53           | 0            |
| Non-Labor   | 0                 | 89                | 179          | 0            |
| NSE   | 0                 | 0                 | 0            | 0            |
| <b>Total</b>  | <b>0</b>          | <b>145</b>        | <b>232</b>   | <b>0</b>     |
| FTE   | 0.0               | 0.5               | 0.5          | 0.0          |
| <b>00772T PT16895A SE Remote Access Services (VPN) Refresh</b>      |                   |                   |              |              |
| Labor   | 0                 | 0                 | 0            | 297          |
| Non-Labor   | 0                 | 0                 | 0            | 500          |
| NSE   | 0                 | 0                 | 0            | 0            |
| <b>Total</b>  | <b>0</b>          | <b>0</b>          | <b>0</b>     | <b>797</b>   |
| FTE   | 0.0               | 0.0               | 0.0          | 2.9          |
| <b>00772U PT81389 SCG BATTERY REPLACEMENT REENGINEER</b>            |                   |                   |              |              |
| Labor   | 0                 | 86                | 0            | 0            |
| Non-Labor   | 0                 | 63                | 0            | 0            |
| NSE   | 0                 | 0                 | 0            | 0            |
| <b>Total</b>  | <b>0</b>          | <b>149</b>        | <b>0</b>     | <b>0</b>     |
| FTE   | 0.0               | 0.8               | 0.0          | 0.0          |
| <b>00772V PT81414 CORE NETWORK DESIGN</b>                           |                   |                   |              |              |
| Labor   | 0                 | 201               | 0            | 0            |
| Non-Labor   | 0                 | 335               | 0            | 0            |
| NSE   | 0                 | 0                 | 0            | 0            |
| <b>Total</b>  | <b>0</b>          | <b>536</b>        | <b>0</b>     | <b>0</b>     |
| FTE   | 0.0               | 2.0               | 0.0          | 0.0          |
| <b>00772W PT81432 PRIVATE NETWORK EXPANSION AND REFRSH</b>          |                   |                   |              |              |
| Labor   | 0                 | 447               | 261          | 0            |
| Non-Labor   | 0                 | 2,350             | 1,400        | 0            |
| NSE   | 0                 | 0                 | 0            | 0            |
| <b>Total</b>  | <b>0</b>          | <b>2,797</b>      | <b>1,661</b> | <b>0</b>     |
| FTE   | 0.0               | 4.4               | 2.6          | 0.0          |

Note: Totals may include rounding differences.

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|  | In 2013\$ (000)   |                   |              |              |
|--|-------------------|-------------------|--------------|--------------|
|  | Adjusted-Recorded | Adjusted-Forecast |              |              |
|  | 2013              | 2014              | 2015         | 2016         |
| <b>00772X Data Center Network Rebuild</b>                                      |                   |                   |              |              |
| Labor  | 0                 | 245               | 0            | 0            |
| Non-Labor  | 0                 | 4,416             | 0            | 0            |
| NSE  | 0                 | 0                 | 0            | 0            |
| <b>Total</b>   | <b>0</b>          | <b>4,661</b>      | <b>0</b>     | <b>0</b>     |
| FTE  | 0.0               | 2.4               | 0.0          | 0.0          |
| <b>00774F PT 15828 In House EDI X12 Services</b>                               |                   |                   |              |              |
| Labor  | 0                 | 0                 | 147          | 63           |
| Non-Labor  | 0                 | 0                 | 309          | 45           |
| NSE  | 0                 | 0                 | 0            | 0            |
| <b>Total</b>   | <b>0</b>          | <b>0</b>          | <b>456</b>   | <b>108</b>   |
| FTE  | 0.0               | 0.0               | 1.4          | 0.6          |
| <b>00776B PT14817 - Business Planning Simulation (BPS) Replacement Project</b> |                   |                   |              |              |
| Labor  | 0                 | 244               | 406          | 0            |
| Non-Labor  | 0                 | 1,616             | 453          | 0            |
| NSE  | 0                 | 0                 | 0            | 0            |
| <b>Total</b>   | <b>0</b>          | <b>1,860</b>      | <b>859</b>   | <b>0</b>     |
| FTE  | 0.0               | 2.4               | 4.0          | 0.0          |
| <b>00776J PT15856 SAP Business Warehouse 7.3 Upgrade</b>                       |                   |                   |              |              |
| Labor  | 0                 | 0                 | 288          | 0            |
| Non-Labor  | 0                 | 0                 | 209          | 0            |
| NSE  | 0                 | 0                 | 0            | 0            |
| <b>Total</b>   | <b>0</b>          | <b>0</b>          | <b>497</b>   | <b>0</b>     |
| FTE  | 0.0               | 0.0               | 2.8          | 0.0          |
| <b>00777B PT14918 BancTec Payment Station Server Refresh</b>                   |                   |                   |              |              |
| Labor  | 0                 | 0                 | 0            | 0            |
| Non-Labor  | 0                 | 0                 | 132          | 0            |
| NSE  | 0                 | 0                 | 0            | 0            |
| <b>Total</b>   | <b>0</b>          | <b>0</b>          | <b>132</b>   | <b>0</b>     |
| FTE  | 0.0               | 0.0               | 0.0          | 0.0          |
| <b>00780A PT14861 Identity &amp; Access Management</b>                         |                   |                   |              |              |
| Labor  | 0                 | 760               | 577          | 267          |
| Non-Labor  | 0                 | 1,918             | 450          | 800          |
| NSE  | 0                 | 0                 | 0            | 0            |
| <b>Total</b>   | <b>0</b>          | <b>2,678</b>      | <b>1,027</b> | <b>1,067</b> |
| FTE  | 0.0               | 7.5               | 5.7          | 2.6          |
| <b>00780C PT81451 Mandiant Expansion</b>                                       |                   |                   |              |              |
| Labor  | 0                 | 7                 | 0            | 0            |
| Non-Labor  | 0                 | 446               | 0            | 0            |
| NSE  | 0                 | 0                 | 0            | 0            |
| <b>Total</b>   | <b>0</b>          | <b>453</b>        | <b>0</b>     | <b>0</b>     |
| FTE  | 0.0               | 0.1               | 0.0          | 0.0          |

Note: Totals may include rounding differences.



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Category: H. Information Technology  
Workpaper: VARIOUS

|  | In 2013\$ (000)   |                   |            |              |
|--|-------------------|-------------------|------------|--------------|
|  | Adjusted-Recorded | Adjusted-Forecast |            |              |
|  | 2013              | 2014              | 2015       | 2016         |
| <b>00782A PT15898 SE Application Platform Technology Refresh</b>               |                   |                   |            |              |
| Labor  | 0                 | 0                 | 334        | 334          |
| Non-Labor  | 0                 | 0                 | 275        | 650          |
| NSE  | 0                 | 0                 | 0          | 0            |
| <b>Total</b>   | <b>0</b>          | <b>0</b>          | <b>609</b> | <b>984</b>   |
| FTE  | 0.0               | 0.0               | 3.3        | 3.3          |
| <b>00788C PT15811 Enterprise Analytics System (EAS) Phase II</b>               |                   |                   |            |              |
| Labor  | 0                 | 0                 | 0          | 52           |
| Non-Labor  | 0                 | 0                 | 0          | 400          |
| NSE  | 0                 | 0                 | 0          | 0            |
| <b>Total</b>   | <b>0</b>          | <b>0</b>          | <b>0</b>   | <b>452</b>   |
| FTE  | 0.0               | 0.0               | 0.0        | 0.5          |
| <b>00756C PT81434 2016 GRC Results of Op Model</b>                             |                   |                   |            |              |
| Labor  | 0                 | 46                | 0          | 0            |
| Non-Labor  | 0                 | 116               | 0          | 0            |
| NSE  | 0                 | 0                 | 0          | 0            |
| <b>Total</b>   | <b>0</b>          | <b>162</b>        | <b>0</b>   | <b>0</b>     |
| FTE  | 0.0               | 0.5               | 0.0        | 0.0          |
| <b>00751A PT81380 SAP SUPER USER PROVISIONING</b>                              |                   |                   |            |              |
| Labor  | 0                 | 17                | 0          | 0            |
| Non-Labor  | 0                 | 0                 | 0          | 0            |
| NSE  | 0                 | 0                 | 0          | 0            |
| <b>Total</b>   | <b>0</b>          | <b>17</b>         | <b>0</b>   | <b>0</b>     |
| FTE  | 0.0               | 0.2               | 0.0        | 0.0          |
| <b>00760A PT14853 ITSM Tool Optimization</b>                                   |                   |                   |            |              |
| Labor  | 0                 | 179               | 177        | 0            |
| Non-Labor  | 0                 | 510               | 300        | 0            |
| NSE  | 0                 | 0                 | 0          | 0            |
| <b>Total</b>   | <b>0</b>          | <b>689</b>        | <b>477</b> | <b>0</b>     |
| FTE  | 0.0               | 1.8               | 1.7        | 0.0          |
| <b>00760E PT16935 Forensics Lab Infrastructure Refresh</b>                     |                   |                   |            |              |
| Labor  | 0                 | 0                 | 0          | 122          |
| Non-Labor  | 0                 | 0                 | 0          | 1,700        |
| NSE  | 0                 | 0                 | 0          | 0            |
| <b>Total</b>   | <b>0</b>          | <b>0</b>          | <b>0</b>   | <b>1,822</b> |
| FTE  | 0.0               | 0.0               | 0.0        | 1.2          |
| <b>00768C PT15804 Microsoft Business Intelligence (BI) Enterprise Platform</b> |                   |                   |            |              |
| Labor  | 0                 | 0                 | 0          | 261          |
| Non-Labor  | 0                 | 0                 | 0          | 200          |
| NSE  | 0                 | 0                 | 0          | 0            |
| <b>Total</b>   | <b>0</b>          | <b>0</b>          | <b>0</b>   | <b>461</b>   |
| FTE  | 0.0               | 0.0               | 0.0        | 2.6          |

Note: Totals may include rounding differences.

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Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Category: H. Information Technology  
Workpaper: VARIOUS

| In 2013\$ (000)   |                   |      |      |
|-------------------|-------------------|------|------|
| Adjusted-Recorded | Adjusted-Forecast |      |      |
| 2013              | 2014              | 2015 | 2016 |

**00770AA PT15932 Web Application Database Firewalls**

|              |          |          |          |              |
|--------------|----------|----------|----------|--------------|
| Labor        | 0        | 0        | 0        | 451          |
| Non-Labor    | 0        | 0        | 0        | 2,678        |
| NSE          | 0        | 0        | 0        | 0            |
| <b>Total</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>3,129</b> |
| FTE          | 0.0      | 0.0      | 0.0      | 4.4          |

**00770C PT14838 End Point Security Project**

|              |          |              |            |          |
|--------------|----------|--------------|------------|----------|
| Labor        | 0        | 191          | 232        | 0        |
| Non-Labor    | 0        | 2,350        | 300        | 0        |
| NSE          | 0        | 0            | 0          | 0        |
| <b>Total</b> | <b>0</b> | <b>2,541</b> | <b>532</b> | <b>0</b> |
| FTE          | 0.0      | 1.9          | 2.3        | 0.0      |

**00770F PT14865 Information Security - Infrastructure Reliability**

|              |          |            |            |            |
|--------------|----------|------------|------------|------------|
| Labor        | 0        | 0          | 0          | 0          |
| Non-Labor    | 0        | 350        | 350        | 350        |
| NSE          | 0        | 0          | 0          | 0          |
| <b>Total</b> | <b>0</b> | <b>350</b> | <b>350</b> | <b>350</b> |
| FTE          | 0.0      | 0.0        | 0.0        | 0.0        |

**00770Y PT 15930 Intrusion Prevention Systems IPS Refresh**

|              |          |          |          |              |
|--------------|----------|----------|----------|--------------|
| Labor        | 0        | 0        | 0        | 262          |
| Non-Labor    | 0        | 0        | 0        | 2,625        |
| NSE          | 0        | 0        | 0        | 0            |
| <b>Total</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>2,887</b> |
| FTE          | 0.0      | 0.0      | 0.0      | 2.6          |

**00770Z PT15931 Source Code Security**

|              |          |          |          |            |
|--------------|----------|----------|----------|------------|
| Labor        | 0        | 0        | 0        | 209        |
| Non-Labor    | 0        | 0        | 0        | 700        |
| NSE          | 0        | 0        | 0        | 0          |
| <b>Total</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>909</b> |
| FTE          | 0.0      | 0.0      | 0.0      | 2.0        |

**00772C PT14850 SE System Management and Automation**

|              |          |          |              |              |
|--------------|----------|----------|--------------|--------------|
| Labor        | 0        | 0        | 1,740        | 603          |
| Non-Labor    | 0        | 0        | 400          | 400          |
| NSE          | 0        | 0        | 0            | 0            |
| <b>Total</b> | <b>0</b> | <b>0</b> | <b>2,140</b> | <b>1,003</b> |
| FTE          | 0.0      | 0.0      | 17.1         | 5.9          |

**00772E PT14852 SE Enterprise Application Messaging and Caching Platform**

|              |          |          |            |          |
|--------------|----------|----------|------------|----------|
| Labor        | 0        | 0        | 390        | 0        |
| Non-Labor    | 0        | 0        | 285        | 0        |
| NSE          | 0        | 0        | 0          | 0        |
| <b>Total</b> | <b>0</b> | <b>0</b> | <b>675</b> | <b>0</b> |
| FTE          | 0.0      | 0.0      | 3.8        | 0.0      |

Note: Totals may include rounding differences.

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Workpaper: VARIOUS

|  | In 2013\$ (000)   |                   |              |              |
|--|-------------------|-------------------|--------------|--------------|
|  | Adjusted-Recorded | Adjusted-Forecast |              |              |
|  | 2013              | 2014              | 2015         | 2016         |
| <b>00772K PT15891B SE EWE Self Service Web provision/deployment</b>            |                   |                   |              |              |
| Labor  | 0                 | 0                 | 0            | 186          |
| Non-Labor  | 0                 | 0                 | 0            | 50           |
| NSE  | 0                 | 0                 | 0            | 0            |
| <b>Total</b>   | <b>0</b>          | <b>0</b>          | <b>0</b>     | <b>236</b>   |
| FTE  | 0.0               | 0.0               | 0.0          | 1.8          |
| <b>00772N PT16884 SE Backup Systems</b>  |                   |                   |              |              |
| Labor  | 0                 | 0                 | 0            | 36           |
| Non-Labor  | 0                 | 0                 | 0            | 320          |
| NSE  | 0                 | 0                 | 0            | 0            |
| <b>Total</b>   | <b>0</b>          | <b>0</b>          | <b>0</b>     | <b>356</b>   |
| FTE  | 0.0               | 0.0               | 0.0          | 0.4          |
| <b>00773A PT81403 TELECOMMUNICATIONS EXPENSE MANAGEMENT</b>                    |                   |                   |              |              |
| Labor  | 0                 | 203               | 0            | 0            |
| Non-Labor  | 0                 | 490               | 0            | 0            |
| NSE  | 0                 | 0                 | 0            | 0            |
| <b>Total</b>   | <b>0</b>          | <b>693</b>        | <b>0</b>     | <b>0</b>     |
| FTE  | 0.0               | 2.0               | 0.0          | 0.0          |
| <b>00776L PT14925 Employee Care Services iVOS Claims System AON eSolutions</b> |                   |                   |              |              |
| Labor  | 0                 | 0                 | 0            | 754          |
| Non-Labor  | 0                 | 0                 | 0            | 1,000        |
| NSE  | 0                 | 0                 | 0            | 0            |
| <b>Total</b>   | <b>0</b>          | <b>0</b>          | <b>0</b>     | <b>1,754</b> |
| FTE  | 0.0               | 0.0               | 0.0          | 7.3          |
| <b>00776M PT15801 GIS SAP Integration</b>                                      |                   |                   |              |              |
| Labor  | 0                 | 0                 | 290          | 230          |
| Non-Labor  | 0                 | 0                 | 950          | 1,045        |
| NSE  | 0                 | 0                 | 0            | 0            |
| <b>Total</b>   | <b>0</b>          | <b>0</b>          | <b>1,240</b> | <b>1,275</b> |
| FTE  | 0.0               | 0.0               | 2.8          | 2.3          |
| <b>00776U PT81448 DESIGN ENGINEERING SW Replacement</b>                        |                   |                   |              |              |
| Labor  | 0                 | 9                 | 3            | 0            |
| Non-Labor  | 0                 | 1,080             | 155          | 0            |
| NSE  | 0                 | 0                 | 0            | 0            |
| <b>Total</b>   | <b>0</b>          | <b>1,089</b>      | <b>158</b>   | <b>0</b>     |
| FTE  | 0.0               | 0.1               | 0.1          | 0.0          |
| <b>00776X PT81399 FINANCIAL ASSET MGMT (FAM)</b>                               |                   |                   |              |              |
| Labor  | 0                 | 691               | 0            | 0            |
| Non-Labor  | 0                 | 2,488             | 0            | 0            |
| NSE  | 0                 | 0                 | 0            | 0            |
| <b>Total</b>   | <b>0</b>          | <b>3,179</b>      | <b>0</b>     | <b>0</b>     |
| FTE  | 0.0               | 6.8               | 0.0          | 0.0          |

Note: Totals may include rounding differences.

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Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Category: H. Information Technology  
Workpaper: VARIOUS

|  | In 2013\$ (000)   |                   |      |      |
|--|-------------------|-------------------|------|------|
|  | Adjusted-Recorded | Adjusted-Forecast |      |      |
|  | 2013              | 2014              | 2015 | 2016 |

**00778A PT14832 Share Point**

|              |          |              |              |              |
|--------------|----------|--------------|--------------|--------------|
| Labor        | 0        | 332          | 1,182        | 362          |
| Non-Labor    | 0        | 2,256        | 3,281        | 2,150        |
| NSE          | 0        | 0            | 0            | 0            |
| <b>Total</b> | <b>0</b> | <b>2,588</b> | <b>4,463</b> | <b>2,512</b> |
| FTE          | 0.0      | 3.3          | 11.6         | 3.6          |

**00778B PT14833 Data Loss Prevention**

|              |          |              |          |          |
|--------------|----------|--------------|----------|----------|
| Labor        | 0        | 284          | 0        | 0        |
| Non-Labor    | 0        | 1,900        | 0        | 0        |
| NSE          | 0        | 0            | 0        | 0        |
| <b>Total</b> | <b>0</b> | <b>2,184</b> | <b>0</b> | <b>0</b> |
| FTE          | 0.0      | 2.8          | 0.0      | 0.0      |

**00778C PT14897 Travel and Expense Mobility**

|              |          |          |              |          |
|--------------|----------|----------|--------------|----------|
| Labor        | 0        | 0        | 232          | 0        |
| Non-Labor    | 0        | 0        | 2,150        | 0        |
| NSE          | 0        | 0        | 0            | 0        |
| <b>Total</b> | <b>0</b> | <b>0</b> | <b>2,382</b> | <b>0</b> |
| FTE          | 0.0      | 0.0      | 2.3          | 0.0      |

**00780B PT16888 Identity & Access Management Infrastructure Refresh**

|              |          |          |          |              |
|--------------|----------|----------|----------|--------------|
| Labor        | 0        | 0        | 0        | 167          |
| Non-Labor    | 0        | 0        | 0        | 1,560        |
| NSE          | 0        | 0        | 0        | 0            |
| <b>Total</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1,727</b> |
| FTE          | 0.0      | 0.0      | 0.0      | 1.6          |

**00788A PT14805 - Enterprise BI Analytics and Dashboards - 2014**

|              |          |            |            |          |
|--------------|----------|------------|------------|----------|
| Labor        | 0        | 41         | 61         | 0        |
| Non-Labor    | 0        | 278        | 390        | 0        |
| NSE          | 0        | 0          | 0          | 0        |
| <b>Total</b> | <b>0</b> | <b>319</b> | <b>451</b> | <b>0</b> |
| FTE          | 0.0      | 0.4        | 0.6        | 0.0      |

**00788B PT15806 Enterprise BI Analytics and Dashboards - 2015**

|              |          |          |          |            |
|--------------|----------|----------|----------|------------|
| Labor        | 0        | 0        | 0        | 97         |
| Non-Labor    | 0        | 0        | 0        | 672        |
| NSE          | 0        | 0        | 0        | 0          |
| <b>Total</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>769</b> |
| FTE          | 0.0      | 0.0      | 0.0      | 1.0        |

**00788D PT16816 Enterprise Analytics System (EAS) Phase III**

|              |          |          |          |            |
|--------------|----------|----------|----------|------------|
| Labor        | 0        | 0        | 0        | 70         |
| Non-Labor    | 0        | 0        | 0        | 400        |
| NSE          | 0        | 0        | 0        | 0          |
| <b>Total</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>470</b> |
| FTE          | 0.0      | 0.0      | 0.0      | 0.7        |

Note: Totals may include rounding differences.

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2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Category: H. Information Technology  
 Workpaper: VARIOUS

| In 2013\$ (000)   |                   |      |      |
|-------------------|-------------------|------|------|
| Adjusted-Recorded | Adjusted-Forecast |      |      |
| 2013              | 2014              | 2015 | 2016 |

**00788E PT16927 Enterprise BI Analytics and Dashboards**

|              |          |          |          |            |
|--------------|----------|----------|----------|------------|
| Labor        | 0        | 0        | 0        | 97         |
| Non-Labor    | 0        | 0        | 0        | 672        |
| NSE          | 0        | 0        | 0        | 0          |
| <b>Total</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>769</b> |
| FTE          | 0.0      | 0.0      | 0.0      | 1.0        |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00760B - PT15824 SCG Desktop Hardware Refresh**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00760.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00760B - PT15824 SCG Desktop Hardware Refresh

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |              |      |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|--------------|------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015         | 2016 |
| <b>Years</b>    |            |                   |          |          |          |          |                   |              |      |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 432          |      |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 6,640        |      |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0            |      |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>7,072</b> |      |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 4.2          |      |

**Business Purpose:**

Sempra's laptops and desktop have a useful life cycle of five years. After five years of service they will be out of warranty and no longer fit for their intended purpose. As well the asset will not have the technical capability to meet the businesses needs and out of warranty failures are expected to exceed 10% a year. It's common for spare parts to not be available from the manufacture after the devices fifth year of age so, it's possible that repair may not be feasible for failed assets older than 5 years.

A hardware refresh program should be investigated as a proactive solution to the above concerns. Once an asset reaches its' fifth year of service it should be proactive replaced to ensure the business has an asset fit for purpose and to mitigate as many failures as possible to reduce impact on production.

**Physical Description:**

Proactively replace roughly 7200 desktops and laptops starting in 2015 and completed by 2018. Evaluate business requirements and ensure the final product meets or exceeds them.

**Project Justification:**

The business will be provided with a laptop or desktop fit for purpose for next five years of the assets life cycle. Results will include but not be limited to reduced impact to the business do to device failures and improved hardware performance to meet the technical needs for the future.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00760.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00760B - PT15824 SCG Desktop Hardware Refresh

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A



**Beginning of Workpaper Sub Details for  
Workpaper Group 00760B**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00760.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00760B - PT15824 SCG Desktop Hardware Refresh  
 Workpaper Detail: 00760B.001 - Sempra's laptops and desktop have a useful life cycle of five years. After five years o  
 In-Service Date: Not Applicable  
 Description:

| Forecast In 2013 \$(000) |              |          |          |              |  |
|--------------------------|--------------|----------|----------|--------------|--|
| Years                    |              | 2014     | 2015     | 2016         |  |
| Labor                    |              | 0        | 0        | 432          |  |
| Non-Labor                |              | 0        | 0        | 6,640        |  |
| NSE                      |              | 0        | 0        | 0            |  |
|                          | <b>Total</b> | <b>0</b> | <b>0</b> | <b>7,072</b> |  |
| FTE                      |              | 0.0      | 0.0      | 4.2          |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00760C - PT15868 SE 2015 Mainframe Expansion**

Southern California Gas Company  
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Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00760.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00760C - PT15868 SE 2015 Mainframe Expansion

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |              |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|--------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016         |
| <b>Years</b>    |            |                   |          |          |          |          |                   |          |              |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0            |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 1,818        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0            |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>0</b> | <b>1,818</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.0      | 0.0          |

**Business Purpose:**

This project is to increase Mainframe processing capacity to its full potential, from 2598 mips to 3139 mips, adding an additional 541 mips to current capacity. The monthly Mainframe Capacity Management reports show continued mainframe growth. Forecasted processor utilization is expected to exceed the 90% threshold of available capacity by 2nd quarter of 2015. As a result, ability to meet our customer's Service Level Agreements would be at risk. The actual usage on the mainframe charted for 2011, 2012 and 2013 has supported these forecasts. Additionally, IBM has announced Market Withdrawal of the z114 series on June 30, 2014. Any materials such as specialty engines cannot be ordered after this date. In order to meet the demands of 2015, plans for a mainframe upgrade would need to start by last quarter of 2014. This upgrade would insure that IT stays in compliance with our SLA's while allowing for workload growth. The advance planning time will also provide better opportunities for mainframe software contract negotiations. The probability for exceeding 7% historical is high due to the SCG MyAccounts Redesign project efforts, the additional load from SCG Advanced Meter processing, Customer Preference Project and ongoing OpEx projects such as Credit and Collections Optimization project that will use legacy resources and data. The hardware needed to go from current model of z114 z04 to the higher model of z114 z05 was already purchased with the 2012 Mainframe Upgrade. This project will simply "turn on" the mainframe to its full capacity at z114 z05. All mainframe software licensed at 2598 mips will need to be negotiated for the increased capacity and new license keys installed prior to this activation.

**Physical Description:**

Activate z114 mainframe server to a z05 model, increasing processing capacity from 2598 mips/321 msu to a 3139 mips/388 msu server model. This will basically require IBM CE to come in and perform the activation, Supply Management to negotiate with mainframe software vendors and CI Platform Services- Mainframe team to install the license keys for those software.

**Project Justification:**

The application batch windows will see improved processing time. There will be a larger cushion available to resolve any problems before SLAs are missed. For example, if any batch processing abends, application teams can apply fixes, run the batch at higher priorities and potentially still be able to meet SLAs, minimizing impacts to their business processes.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00760.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00760C - PT15868 SE 2015 Mainframe Expansion

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00760C**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00760.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00760C - PT15868 SE 2015 Mainframe Expansion  
 Workpaper Detail: 00760C.001 - This project is to increase Mainframe processing capacity to it's full potential, from  
 In-Service Date: 04/30/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |          |              |  |
|--------------------------|--------------|----------|----------|--------------|--|
| Years                    |              | 2014     | 2015     | 2016         |  |
| Labor                    |              | 0        | 0        | 0            |  |
| Non-Labor                |              | 0        | 0        | 1,818        |  |
| NSE                      |              | 0        | 0        | 0            |  |
|                          | <b>Total</b> | <b>0</b> | <b>0</b> | <b>1,818</b> |  |
| FTE                      |              | 0.0      | 0.0      | 0.0          |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00760D - PT16934 eGRC Infrastructure Refresh**



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00760.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00760D - PT16934 eGRC Infrastructure Refresh

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |              |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|--------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016         |
| <b>Years</b>    |            |                   |          |          |          |          |                   |          |              |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 190          |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 1,800        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0            |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>0</b> | <b>1,990</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.0      | 1.9          |

**Business Purpose:**

This project will evaluate current technologies and replace obsolete infrastructure implemented with the 2011 Enterprise Forensics project to established the current state Forensics Lab. In 2016 the project will refresh the hardware components and re-evaluate the software aspects to ensure current business,

**Physical Description:**

Replace end of life eGRC (Archer) systems platform

**Project Justification:**

Legal and Information Security forensics capabilities and security requirements are being met.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00760.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00760D - PT16934 eGRC Infrastructure Refresh

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00760D**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00760.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00760D - PT16934 eGRC Infrastructure Refresh  
 Workpaper Detail: 00760D.001 - Replace end of life eGRC (Archer) systems platform  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |          |          |              |  |
|--------------------------|----------|----------|--------------|--|
| Years                    | 2014     | 2015     | 2016         |  |
| Labor                    | 0        | 0        | 190          |  |
| Non-Labor                | 0        | 0        | 1,800        |  |
| NSE                      | 0        | 0        | 0            |  |
| <b>Total</b>             | <b>0</b> | <b>0</b> | <b>1,990</b> |  |
| FTE                      | 0.0      | 0.0      | 1.9          |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00760F - PT81440 Data Center Network Core**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00760.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00760F - PT81440 Data Center Network Core

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016     |
| Years           |            |                   |          |          |          |          |                   |          |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 280               | 0        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 853               | 0        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1,133</b>      | <b>0</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 2.7               | 0.0      | 0.0      |

**Business Purpose:**

The Data Center Network Core project will address the following urgent IT infrastructure needs: at both RB and MPK:  
 Implement parallel network cores as a long-term replacement for the core of an unsupported legacy network.  
 Provide a path for replacement of failed network components, versus current eBay or grey market purchases. Have equipment on hand to address significant risk of failure with legacy environment.  
 Provide a next-generation network fabric in support of server/system replacements and additions, replacing a costly and overly complex legacy system of production, storage, and backup networks.  
 Integrate network with compute and storage infrastructure, automate network, storage and server deployment, reduce the number of interfaces and reduce operational costs, delivery time.  
 Provide a capability to aggregate intrusion prevention and policy enforcement in a single physical area and extend services logically anywhere in the new network, improving security capabilities, system reliability, and cost effectiveness.

**Physical Description:**

Begin replacement of aging network hardware. Build new reliable and secure Data Center network distribution infrastructure.  
 Lay foundation to provide reliable, stable and supported network core server infrastructure.  
 Enhance Data Center network server access infrastructure.  
 Build and deploy reliable backup network capabilities using the new data center network fabric.  
 Minimize down time to the business application users and reduce service request times  
 Continue to provide high availability for critical production systems.

**Project Justification:**

Greater reliability for IT services – hardware condition, modular Operating System, vendor support, serviceability of new architecture  
 Reduction in both lead-times and support requirements within data center – simplification and automation  
 Reduction of physical, power, and environmental footprint – simpler architecture, more efficient electronics  
 Improved application performance – fewer Application Specific Integrated Circuit traversal, any-to-any architecture  
 Reduction in overall system cost – fewer, lower-cost components

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00760.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00760F - PT81440 Data Center Network Core

**Forecast Methodology:**

**Labor - Zero-Based**

The forecast is based upon the current project timeline.

**Non-Labor - Zero-Based**

The forecast is based upon the current project timeline.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00760F**



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00760.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00760F - PT81440 Data Center Network Core  
 Workpaper Detail: 00760F.001 - Data Center Network Core  
 In-Service Date: 03/31/2014  
 Description:

| Forecast In 2013 \$(000) |              |              |          |          |
|--------------------------|--------------|--------------|----------|----------|
| Years                    |              | 2014         | 2015     | 2016     |
| Labor                    |              | 280          | 0        | 0        |
| Non-Labor                |              | 853          | 0        | 0        |
| NSE                      |              | 0            | 0        | 0        |
|                          | <b>Total</b> | <b>1,133</b> | <b>0</b> | <b>0</b> |
| FTE                      |              | 2.7          | 0.0      | 0.0      |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00762A - PT14872 SCG 2014 Active Directory Refresh**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00762.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00762A - PT14872 SCG 2014 Active Directory Refresh

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |            |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 139        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 726        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>865</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 1.4        | 0.0      |

**Business Purpose:**

Replace the existing, aging hardware and software that supports the Active Directory platform. The majority of the hardware will expire in Q4 2014 with the remaining hardware coming off warranty in Q2 2015.

**Physical Description:**

Replace 46 physical Domain Controllers located at 20 company locations. Additionally, 11 virtual management and non-production Domain Controllers will be replaced. This will include a new version of Active Directory which is included as part of the Operating System.

**Project Justification:**

PERHAPS reduce login time but we need to wait and see  
 - GUI for Active Directory Recycle Bin, Avoid extended support of aging operating systems and hardware.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00762.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00762A - PT14872 SCG 2014 Active Directory Refresh

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00762A**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00762.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00762A - PT14872 SCG 2014 Active Directory Refresh  
 Workpaper Detail: 00762A.001 - Replace the existing aging hardware and software that supports the Active Directory pl  
 In-Service Date: 12/31/2015  
 Description:

| Forecast In 2013 \$(000) |              |          |            |          |  |
|--------------------------|--------------|----------|------------|----------|--|
| Years                    |              | 2014     | 2015       | 2016     |  |
| Labor                    |              | 0        | 139        | 0        |  |
| Non-Labor                |              | 0        | 726        | 0        |  |
| NSE                      |              | 0        | 0          | 0        |  |
|                          | <b>Total</b> | <b>0</b> | <b>865</b> | <b>0</b> |  |
| FTE                      |              | 0.0      | 1.4        | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00762B - PT81355 SCG WAN REBUILD PH IV**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00762.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00762B - PT81355 SCG WAN REBUILD PH IV

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |          |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 261               | 0        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 517               | 0        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>778</b>        | <b>0</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 2.6               | 0.0      | 0.0      |

**Business Purpose:**

The project will deploy the incremental capacity upgrades required to support the OpEx GIS and GWD programs , retire Passport network, upgrade end-of-life MW hardware which has served Sempra for nearly 15 years, and increase the efficiency of managing the network through software enhancements and technologies to remotely manage devices. The new systems delivered by WAN Rebuild 2010 (phase III) and this project (SCG WAN Rebuild Phase IV) will be capable of more efficient use of expensive transport (circuits), enable capacity upgrades as required (additional cost), and provide network flexibility in support of major programs.

**Physical Description:**

Provide capacity to support 2011 GIS go-live sites / services and GWD deployments scheduled for 3/2012 using a combination of Metro-E, MW and Sempra fiber circuits.  
 Upgrade routers to OS 10.4.R3 and further implementation of Traffic Engineering and QOS attributes to support efficient traffic management  
 Implement 14 MW path upgrades using the current standard Aviat hardware.  
 Replace 10-hops of Truepoint radios to support Jumbo frames  
 Retire the legacy Passport network based on recommendations from design work underway (a single homogenous network)

**Project Justification:**

The project will deploy the incremental capacity upgrades required to support the OpEx GIS and GWD programs , retire Passport network, upgrade end-of-life MW hardware which has served Sempra for nearly 15 years. The new systems delivered by WAN Rebuild 2010 (phase III) and this project (SCG WAN Rebuild Phase IV) will be capable of more efficient use of expensive transport (circuits), enable capacity upgrades as required (additional cost), and provide network flexibility in support of major programs.

*Note: Totals may include rounding differences.*



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00762.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00762B - PT81355 SCG WAN REBUILD PH IV

**Forecast Methodology:**

**Labor - Zero-Based**

The forecast is based upon the current project timeline.

**Non-Labor - Zero-Based**

The forecast is based upon the current project timeline.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00762B**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00762.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00762B - PT81355 SCG WAN REBUILD PH IV  
 Workpaper Detail: 00762B.001 - SCG WAN REBUILD PH IV  
 In-Service Date: 03/31/2014  
 Description:

| Forecast In 2013 \$(000) |              |            |          |          |  |
|--------------------------|--------------|------------|----------|----------|--|
| Years                    |              | 2014       | 2015     | 2016     |  |
| Labor                    |              | 261        | 0        | 0        |  |
| Non-Labor                |              | 517        | 0        | 0        |  |
| NSE                      |              | 0          | 0        | 0        |  |
|                          | <b>Total</b> | <b>778</b> | <b>0</b> | <b>0</b> |  |
| FTE                      |              | 2.6        | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00762C - PT81442 SE Network Attached Storage (NAS) Replacement**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00762.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00762C - PT81442 SE Network Attached Storage (NAS) Replacement

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |          |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 128               | 0        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 1,020             | 0        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1,148</b>      | <b>0</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 1.3               | 0.0      | 0.0      |

**Business Purpose:**

This project will refresh/replace the existing Network Attached Storage (NAS) disk storage appliances as part of the 5 year infrastructure refresh cycle. Information Technology (IT) currently supports NAS appliances for both Southern California Gas and San Diego Gas & Electric at the Rancho Bernardo and Monterey Park data centers as well as hardware located at the Gas Company Tower and Century Park server rooms. The project will consolidate the controllers at Century Park into the Rancho Bernardo Data Center and consolidate the Gas Company controllers into the Monterey Park Data Center.

The project will ensure the integrity of the Access Control List as it is transferred to the system to minimize risk of unauthorized access to non-public transmission and secure/private information stored on NAS storage.

**Physical Description:**

Replace end-of-support-life hardware to reduce the likelihood of failure.  
 New solution will be able to seamlessly scale out in terms of capacity and firmware upgrades.  
 Compatible with existing applications.  
 Ensure data integrity for Access Control List to minimize risk of unauthorized access to information stored on the NAS storage.

**Project Justification:**

25% of the Network Attached Storage disk shelves in Monterey Park and Rancho Bernardo will be reaching "End of Support Life" (EOSL) in 2013. The refresh of the existing Network Attached Storage environment will avoid future O&M expenses related to third party support using uncertified hardware to replace failed EOSL shelves and drives. In addition the refresh avoids additional future O&M charges required to support shelves that have not reached EOSL. In order to maintain our existing disaster recovery posture, the Century Park and Gas Company Tower Network Attached Storage environments must utilize the same firmware levels as the RB & MPK environments. A solution that selectively upgrades components will jeopardize disaster recovery. The current firmware level restricts us from adding additional capacity to the Network Attached Storage. The firmware provided by the refresh will allow us to utilize larger capacity drives in a much smaller footprint. Taking advantage of the new hardware and firmware will reduce our cost of storage from between \$6 - \$8 per gigabyte to \$1 - \$2 per gigabyte.

The current annual maintenance and support costs of approximately \$470K will be reduced to \$0K for 2014 and \$120K for the years 2015 thru 2018 with the implementation of this project.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00762.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00762C - PT81442 SE Network Attached Storage (NAS) Replacement

**Forecast Methodology:**

**Labor - Zero-Based**

The forecast is based upon the current project timeline.

**Non-Labor - Zero-Based**

The forecast is based upon the current project timeline.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00762C**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00762.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00762C - PT81442 SE Network Attached Storage (NAS) Replacement  
 Workpaper Detail: 00762C.001 - SE Network Attached Storage (NAS) Replacement  
 In-Service Date: 03/31/2014  
 Description:

| Forecast In 2013 \$(000) |              |              |          |          |  |
|--------------------------|--------------|--------------|----------|----------|--|
| Years                    |              | 2014         | 2015     | 2016     |  |
| Labor                    |              | 128          | 0        | 0        |  |
| Non-Labor                |              | 1,020        | 0        | 0        |  |
| NSE                      |              | 0            | 0        | 0        |  |
|                          | <b>Total</b> | <b>1,148</b> | <b>0</b> | <b>0</b> |  |
| FTE                      |              | 1.3          | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*



**Beginning of Workpaper Group**  
**00762D - PT81443 SEu Wireless/Sempra Virtual Office Upgrade and Expansion**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00762.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00762D - PT81443 SEu Wireless/Sempra Virtual Office Upgrade and Expansion

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |          |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 269               | 0        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 393               | 0        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>662</b>        | <b>0</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 2.6               | 0.0      | 0.0      |

**Business Purpose:**

Upgrade wireless access points to support wireless 802.11ac standards at San Diego Gas & Electric and Southern California Gas campus locations where wireless access is currently available. Improve failover capabilities by implementing high availability controllers at Monterey Park (MPK) and Rancho Bernardo (RB). The new high availability wireless configuration will reduce client impact and improve recovery time in an event of a failure by leveraging both data centers. SVO devices and Avaya phones will be collected from IT staff and redeployed to Directors and Executives. Project will extend network coverage to support wireless updates of Mobile Data Terminals (MDT's) located in parking lot areas of locations with existing wireless service.

Targeted Sites:

SCG: Monterey Park (MPK), Gas Company Tower, San Dimas, Compton, Redlands, Pico Rivera, Anaheim, Chatsworth, Murrieta, Downey Energy Resource Center, and all (53) Base locations, including parking lots, and gas transmission sites with existing wireless access points.

SDGE: Rancho Bernardo (RB), Century Park, Lightwave, San Clemente, Mission Bldg C Telecom, Energy Innovation Center, and all (10) District Office locations, including parking lots, and substations with existing wireless access points.

**Physical Description:**

Wireless clients through the company are experiencing intermittent drops and delays in service; Clients need relief from being dropped and inability to connect, as well as accommodate future user growth.  
 SVO has proven to be a preferred remote access method for Executive and Director users; Increase throughput, capacity and redundancy for SVO.  
 Increase support capacity and redundancy for Sempra Personally Owned Device (POD)  
 Expand wireless coverage to parking lots to accommodate mobile data terminal (MDT) efficiency

**Project Justification:**

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00762.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00762D - PT81443 SEu Wireless/Sempra Virtual Office Upgrade and Expansion

Increase wireless bandwidth at selected San Diego Gas & Electric and Southern California Gas campus locations.  
Increase employee support for Personally Owned Device (POD) by addressing the growing number of wireless devices.  
Upgrade wireless infrastructure to align with a five-year refresh cycle.  
Support and Management  
Supportability: Better utilization of staff at each utility.  
Implement design changes to better utilize Internet connections at both data centers.  
Implement design changes to increase redundancy between MPK and RB data centers.  
Improve Sempra Virtual Office (SVO) stability to connect from home or other non-Sempra locations.  
Prepare for the introduction of Microsoft Lync for peer-to-peer audio/video conferencing.  
Provide security benefits for detecting rogue devices.  
Expand wireless coverage to company parking lots to support wireless updates for MDTs.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00762.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00762D - PT81443 SEu Wireless/Sempra Virtual Office Upgrade and Expansion

**Forecast Methodology:**

**Labor - Zero-Based**

The forecast is based upon the current project timeline.

**Non-Labor - Zero-Based**

The forecast is based upon the current project timeline.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00762D**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00762.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00762D - PT81443 SEu Wireless/Sempra Virtual Office Upgrade and Expansion  
 Workpaper Detail: 00762D.001 - SEu Wireless/Sempra Virtual Office Upgrade and Expansion  
 In-Service Date: 03/31/2014  
 Description:

| Forecast In 2013 \$(000) |            |          |          |  |
|--------------------------|------------|----------|----------|--|
| Years                    | 2014       | 2015     | 2016     |  |
| Labor                    | 269        | 0        | 0        |  |
| Non-Labor                | 393        | 0        | 0        |  |
| NSE                      | 0          | 0        | 0        |  |
| <b>Total</b>             | <b>662</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 2.6        | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00764I - PT16813 CIS Frontend Architecture Optimization**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00764.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00764I - PT16813 CIS Frontend Architecture Optimization

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |              |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|--------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016         |
| <b>Years</b>    |            |                   |          |          |          |          |                   |          |              |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 1,044        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 500          |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0            |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>0</b> | <b>1,544</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.0      | 10.2         |

**Business Purpose:**

Decouple CIS Front-end Smalltalk architecture from application and replace with updated front-end that is easier to change and maintain.

**Physical Description:**

CIS windows written in Smalltalk

**Project Justification:**

Easier for CCC Representatives to learn and use. More efficiently follow the work flow of the functional process being performed.

*Note: Totals may include rounding differences.*



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00764.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00764I - PT16813 CIS Frontend Architecture Optimization

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00764I**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00764.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00764I - PT16813 CIS Frontend Architecture Optimization  
 Workpaper Detail: 00764I.001 - Decouple CIS Front-end Smalltalk architecture from application and replace with updated  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |          |              |  |
|--------------------------|--------------|----------|----------|--------------|--|
| Years                    |              | 2014     | 2015     | 2016         |  |
| Labor                    |              | 0        | 0        | 1,044        |  |
| Non-Labor                |              | 0        | 0        | 500          |  |
| NSE                      |              | 0        | 0        | 0            |  |
|                          | <b>Total</b> | <b>0</b> | <b>0</b> | <b>1,544</b> |  |
| FTE                      |              | 0.0      | 0.0      | 10.2         |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00768A - PT14854 SAP ECC and BI Archiving**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00768.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00768A - PT14854 SAP ECC and BI Archiving

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |          |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 294               | 0        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 508               | 0        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>802</b>        | <b>0</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 2.9               | 0.0      | 0.0      |

**Business Purpose:**

Storage requirements for the SAP ECC and BI Landscapes are growing. ECC alone is growing by 30Gig per month and accelerating. Time windows to perform backups and batch processing are shrinking. Performance is being impacted as some programs are taking a very long time to run due to the size of the underlying database tables. Archiving of transaction data eventually becomes a necessity for meeting availability and performance requirements.

**Physical Description:**

SAP ECC and SAP BW. The first phase of the ECC effort will likely be limited to one functional area (e.g. MM) as a pilot. The remaining functional areas will be addressed in subsequent phases. The following SAP modules are in Scope (MM Materials Management, PM Plant Maintenance, FI Finance, CO Cost accounting)

**Project Justification:**

Faster backups, better performance, reduced storage costs (both immediate and ongoing)

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00768.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00768A - PT14854 SAP ECC and BI Archiving

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00768A**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00768.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00768A - PT14854 SAP ECC and BI Archiving  
 Workpaper Detail: 00768A.001 - SAP Archiving  
 In-Service Date: 12/31/2014  
 Description:

| Forecast In 2013 \$(000) |            |          |          |  |
|--------------------------|------------|----------|----------|--|
| Years                    | 2014       | 2015     | 2016     |  |
| Labor                    | 294        | 0        | 0        |  |
| Non-Labor                | 508        | 0        | 0        |  |
| NSE                      | 0          | 0        | 0        |  |
| <b>Total</b>             | <b>802</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 2.9        | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*



**Beginning of Workpaper Group**  
**00768B - PT14855 Business Objects Upgrade**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00768.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00768B - PT14855 Business Objects Upgrade

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016     |
| Years           |            |                   |          |          |          |          |                   |            |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 348        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 300        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>648</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 3.4        | 0.0      |

**Business Purpose:**

The reporting platform being used today by 800 users of the SDG&E Data Warehouse and the SCG Data Warehouse is Business Objects XI r2, which is over 5 years old and no longer being supported by the vendor. In addition, this platform lacks many of the rich and robust analytical capabilities that is available via the Business Objects v4.0 enterprise platform which Sempra owns. The purpose of this project is to upgrade clients to the Business Objects v4.0 platform which is the current enterprise BI reporting standard for SAP.

**Physical Description:**

The project will be a multiphase project to upgrade reporting by functional area. The current Business Objects XI r2 environment contains approx. 120 universes and 7500 reports. The scope includes upgrading existing universes and reports to the Business Objects v4.0 platform and applying the appropriate security updates

**Project Justification:**

1. Reporting environment is in compliance for SAP support.
2. Once upgrade is complete, administration costs are reduced with one less Business Objects environment to support (BI team is currently supporting three BOBJ reporting environments: BOXI R/2, v3.1, and v4.0).
3. Users can take advantage of new reporting capabilities, data integration, self service not available in the BOXI r2 version.
4. Access to data across the different BI environments by all leveraging Business Objects 4.0 environment.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00768.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00768B - PT14855 Business Objects Upgrade

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00768B**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00768.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00768B - PT14855 Business Objects Upgrade  
 Workpaper Detail: 00768B.001 - The reporting platform being used today by 800 users of the SDG&E Data Warehouse and th  
 In-Service Date: 12/31/2015  
 Description:

| Forecast In 2013 \$(000) |          |            |          |  |
|--------------------------|----------|------------|----------|--|
| Years                    | 2014     | 2015       | 2016     |  |
| Labor                    | 0        | 348        | 0        |  |
| Non-Labor                | 0        | 300        | 0        |  |
| NSE                      | 0        | 0          | 0        |  |
| <b>Total</b>             | <b>0</b> | <b>648</b> | <b>0</b> |  |
| FTE                      | 0.0      | 3.4        | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00770A - PT14834 SEu Web-Audio Conferencing and Instant Messaging Refresh**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770A - PT14834 SEu Web-Audio Conferencing and Instant Messaging Refresh

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |              |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|--------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015         | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |              |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 70                | 139          | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 194               | 950          | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0            | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>264</b>        | <b>1,089</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.7               | 1.4          | 0.0      |

**Business Purpose:**

This proposed project will merge our enterprise web and audio conferencing and instant messaging services by consolidating the functionality of Cisco MeetingPlace and Microsoft Office Communications Server 2007 R2 into a single platform; currently both systems are end-of-life from their respective vendors:  
 The implementation will allow IT to deliver the following new and upgraded enterprise Unified Communications and Collaborations capabilities to our desktop and mobile computing environments:

- A highly available audio/video/web conferencing platform sized to accommodate immediate and future conferencing needs.
- A supported Instant Messaging with Enhanced Presence solution that tightly integrates with SharePoint and Exchange (this assumes Microsoft Lync is our chosen solution).
- Audio/video/web collaboration capabilities across multiples platforms such as Telepresence, Polycom, Windows and mobile devices.

**Physical Description:**

The scope will include infrastructure, software (if applicable) and licensing required implementing a solution to meet the business purpose including a failover (disaster recover) environment.

**Project Justification:**

This project will address the following business problems:

Business Problem #1: SEu's current enterprise conferencing platform, Cisco MeetingPlace, is no longer vendor-supported and no longer able to accommodate our existing conferencing demands. This limited capacity often results in denied access to attendees. MeetingPlace is also unable to accommodate large audio/video/web meetings- something regularly requested by our business units. MeetingPlace is a not only our enterprise conferencing platform but also a critical tool leveraged for IT service restoration.

Business Problem #2: SEu's current enterprise Instant Messaging platform, Microsoft Office Communications Server (OCS) 2007 R2, has reached end-of-life and mainstream vendor support and is currently installed on end-of-life server hardware. OCS is a Tier I application.

Business Problem #3: Our current MeetingPlace and Instant Messaging capabilities do not integrate and/or allow full functionality on mobile devices.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00770.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00770A - PT14834 SEu Web-Audio Conferencing and Instant Messaging Refresh

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A



**Beginning of Workpaper Sub Details for  
Workpaper Group 00770A**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770A - PT14834 SEu Web-Audio Conferencing and Instant Messaging Refresh  
 Workpaper Detail: 00770A.001 - PT14834  
 In-Service Date: 12/31/2015  
 Description:

| Forecast In 2013 \$(000) |              |            |              |          |  |
|--------------------------|--------------|------------|--------------|----------|--|
| Years                    |              | 2014       | 2015         | 2016     |  |
| Labor                    |              | 70         | 139          | 0        |  |
| Non-Labor                |              | 194        | 950          | 0        |  |
| NSE                      |              | 0          | 0            | 0        |  |
|                          | <b>Total</b> | <b>264</b> | <b>1,089</b> | <b>0</b> |  |
| FTE                      |              | 0.7        | 1.4          | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00770AB - PT81316 WINDOWS 7 PLATFORM REPLACEMENT (W7U)**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770AB - PT81316 WINDOWS 7 PLATFORM REPLACEMENT (W7U)

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |          |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 408               | 0        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 1,001             | 0        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1,409</b>      | <b>0</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 4.0               | 0.0      | 0.0      |

**Business Purpose:**

there are 351 more machines left for deployment at SCG

**Physical Description:**

there are 351 more machines left for deployment at SCG

**Project Justification:**

This project funds the PCOMM remediation effort which will address SOX audit issues; reduce or avoid O&M cost by funding internal labors vs contract labors due to IT workforce reduction; modernized Call Centers by replacing desktop PCs with laptops.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00770.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00770AB - PT81316 WINDOWS 7 PLATFORM REPLACEMENT (W7U)

**Forecast Methodology:**

**Labor - Zero-Based**

The forecast is based upon the current project timeline.

**Non-Labor - Zero-Based**

The forecast is based upon the current project timeline.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00770AB**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770AB - PT81316 WINDOWS 7 PLATFORM REPLACEMENT (W7U)  
 Workpaper Detail: 00770AB.001 - WINDOWS 7 PLATFORM REPLACEMENT (W7U)  
 In-Service Date: 12/31/2014  
 Description:

| Forecast In 2013 \$(000) |              |          |          |  |
|--------------------------|--------------|----------|----------|--|
| Years                    | 2014         | 2015     | 2016     |  |
| Labor                    | 408          | 0        | 0        |  |
| Non-Labor                | 1,001        | 0        | 0        |  |
| NSE                      | 0            | 0        | 0        |  |
| <b>Total</b>             | <b>1,409</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 4.0          | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00770AC - PT81416 ENTERPRISE MESSAGING INFRASTRUCTURE**



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770AC - PT81416 ENTERPRISE MESSAGING INFRASTRUCTURE

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016     |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 244               | 0        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 734               | 0        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>978</b>        | <b>0</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 2.4               | 0.0      | 0.0      |

**Business Purpose:**

Mainstream support for the currently deployed version of Sempra's enterprise messaging system, Microsoft Exchange 2007, has ended and the infrastructure on which we are running our enterprise email system on has reached end of life. The project has 3 main areas of focus:  
 Upgrade the enterprise messaging infrastructure (hardware & software) to current technology and vendor supported versions. Improve system availability time by leveraging the new automated replication and recover features available within Exchange 2013.  
 Evaluate & implement a new spam (unsolicited email) filtering solution with improved client capabilities.  
 Increase capacity for client mobile email connections to meet the higher demand for remote/mobile client email accessibility in our environment and easier connectivity without Remote Access (i.e. VPN).

**Physical Description:**

Provide a compatible and vendor supported environment for Apple & Windows email clients which includes iPhones, iPad & other mobile device support.  
 Remain compatible with ActiveSync and BlackBerry technologies.  
 High availability. Less tolerance for outages and reducing production outage time.  
 Meet current, applicable Affiliate Compliance, legal, CPUC, records retention and audit rules that apply to our current email environment, such as calendar archiving for utility directors and above, email purge after 30 days, etc.  
 Client self-service for restoring deleted emails.  
 Clean up Global Address List (GAL), remove non-active addresses and insure accurate replication with Sempra unregulated business units. Establish a process for maintaining the GAL and insuring proper presentation.  
 Deploy Outlook Anywhere (access to email without going through VPN) within the enterprise.  
 Ensure tools & applications deployed as part of the project are in alignment with key 2013 collaboration strategies (i.e. mobility, social collaboration and messaging).

**Project Justification:**

Increased stability of infrastructure to increase email reliability thus reducing business interruptions.  
 Apple and third-party mobile devices are better supported and more reliable when connecting to current versions of Exchange & email infrastructure.  
 Better spam identification capabilities as evidenced by the experience of USG&P, including improved ability to distinguish true mail storm attacks from legitimate volume emails sent from applications.  
 Ability to handle increased demand and usage of client mobile devices.  
 Improved flexibility for both Apple and Microsoft computers to access email from anywhere with internet connectivity (without the need for VPN).

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00770.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00770AC - PT81416 ENTERPRISE MESSAGING INFRASTRUCTURE

**Forecast Methodology:**

**Labor - Zero-Based**

The forecast is based upon the current project timeline.

**Non-Labor - Zero-Based**

The forecast is based upon the current project timeline.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00770AC**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770AC - PT81416 ENTERPRISE MESSAGING INFRASTRUCTURE  
 Workpaper Detail: 00770AC.001 - ENTERPRISE MESSAGING INFRASTRUCTURE  
 In-Service Date: 03/31/2014  
 Description:

| Forecast In 2013 \$(000) |              |             |             |             |
|--------------------------|--------------|-------------|-------------|-------------|
| Years                    |              | <u>2014</u> | <u>2015</u> | <u>2016</u> |
| Labor                    |              | 244         | 0           | 0           |
| Non-Labor                |              | 734         | 0           | 0           |
| NSE                      |              | 0           | 0           | 0           |
|                          | <b>Total</b> | <b>978</b>  | <b>0</b>    | <b>0</b>    |
| FTE                      |              | 2.4         | 0.0         | 0.0         |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00770AD - PT81417 EDIX Enhancement - Phase 2**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770AD - PT81417 EDIX Enhancement - Phase 2

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |            |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 367               | 123        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 30                | 0          | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>397</b>        | <b>123</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 3.6               | 1.2        | 0.0      |

**Business Purpose:**

EDIX is the system which manages data transfer between applications used by Sempra Energy utilities, corporate center and over 200 external business partners. The EDIX system manages over 2,200 different transactions. Three examples of critical transactions:

- Employee Data, Reports, Pay Schedules - Between ADP and MyInfo
- Core and Non-Core Billing and Remittances - Between CIS/CISCO Billing and Customers/Vendors
- Gas Scheduling and Gas Transportation Nominations - Between Envoy/Pinnacle and various trading partners See Appendix F and G for a list of systems and business partners that rely on the EDIX infrastructure. The objective of the EDIX enhancement program is to provide an updated, scalable and more secure infrastructure. The enhancement activities began in August, 2012 with EDIX Phase 1, currently managed under the Advanced Meter program. Phase 1 will be complete in August, 2013. EDIX Phase 2 will complete these objectives by deploying the remaining software, updating system code and converting all remaining file transfer transactions from the legacy EDIX environment to the new, more secure environment.

**Physical Description:**

EDIX Database  
 EDIX Databases will run Oracle RAC (Real Application Cluster) 11gR2 (Latest supported)  
 EDIX Database Server instances will be carved out of existing Oracle RAC Enterprise Cloud Infrastructure (cost effective)  
 The Operating System for the EDIX Oracle Database servers will be Linux Red Hat version 5.8  
 The EDIX Oracle database requirements are 8GB of memory, 2vcpus  
 EDIX My webMethods 8.2.2 Portal will have a separate Oracle DB schema by design  
 EDIX Application Servers  
 EDIX Application servers will be load balanced for QA and PROD Environments by design  
 EDIX Application Servers will be virtualized – (Cost savings and efficient use of precious data center resources)  
 The Operating System for the EDIX Application Servers will be Linux Red Hat version 5.8 due to vendor constraints  
 EDIX Application server specs will be 16GB of memory, 2vcpus for PROD and QA  
 GXS (Global Exchange Services) Licensing Upgrade to QA from 1vCPU to 2 (matching production environment)  
 EDIX Integration Application Servers will have webMethods version 8.2.2 installed (Latest supported)  
 EDIX My webMethods Portal Servers will have version 8.2.2 installed (Latest supported)

**Project Justification:**

*Note: Totals may include rounding differences.*

Southern California Gas Company  
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Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00770.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00770AD - PT81417 EDIX Enhancement - Phase 2

The current EDIX infrastructure is suffering from numerous operational challenges:

- The current system is near 100% capacity with continued expectations for growth (See slide #9)
- The last EDIX system upgrade was in 2006
- Over 80% of the current infrastructure is not supported (Hardware/Software/Database)
- EDIX Team is performing extra work and customization to keep the system functional
- Current EDIX system cannot process large data files (special handling is required)

EDIX Phase 2 is the final phase of the upgrade and must be completed to avoid additional costs of maintaining two separate environments for an extended period of time

EDIX file transfers must be conducted in a secure manner. Recent security scans uncovered vulnerabilities within the current EDIX environment. This project will encrypt data at rest (data stored on the new infrastructure) as well as updating the encryption method used for data in transit to a more secure protocol addressing those vulnerabilities

If Phase 2 is not implemented, there would be extended costs of running parallel environments (software licensing, support labor and data center footprint). EDIX Phase 2 must be implemented to realize full benefits of the upgrade

EDIX system is a Disaster Recovery "Tier 1" application and must maintain proper system integrity and infrastructure to maintain business recovery objectives and meet business requirements for reliable and secure file transfers

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00770.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00770AD - PT81417 EDIX Enhancement - Phase 2

**Forecast Methodology:**

**Labor - Zero-Based**

The forecast is based upon the current project timeline.

**Non-Labor - Zero-Based**

The forecast is based upon the current project timeline.

**NSE - Zero-Based**

N/A



**Beginning of Workpaper Sub Details for  
Workpaper Group 00770AD**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770AD - PT81417 EDIX Enhancement - Phase 2  
 Workpaper Detail: 00770AD.001 - EDIX Enhancement - Phase 2  
 In-Service Date: 03/31/2015  
 Description:

| Forecast In 2013 \$(000) |              |            |            |          |  |
|--------------------------|--------------|------------|------------|----------|--|
| Years                    |              | 2014       | 2015       | 2016     |  |
| Labor                    |              | 367        | 123        | 0        |  |
| Non-Labor                |              | 30         | 0          | 0        |  |
| NSE                      |              | 0          | 0          | 0        |  |
|                          | <b>Total</b> | <b>397</b> | <b>123</b> | <b>0</b> |  |
| FTE                      |              | 3.6        | 1.2        | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00770AE - PT81426 SERVER REPLACEMENT-AIX RETIREMENT**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770AE - PT81426 SERVER REPLACEMENT-AIX RETIREMENT

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |            |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 502               | 227        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 1,849             | 320        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>2,351</b>      | <b>547</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 4.9               | 2.2        | 0.0      |

**Business Purpose:**

There are total of 44 IBM Power frames. At successful completion, this project will decommission 20 of these Power frames with the AIX 5.3 operating system. There are 4 additional Power frames with AIX 5.3 that are out-of-scope. These host the SORT application which in the current state cannot migrate from AIX 5.3. The remaining 20 Power frames use higher version (AIX 7.1) of AIX and are also out-of-scope.

These 20 Power frames have been essential computing resources for critical business systems that support Smart Meter environments and business applications such as Envoy, MCS (SOX applications) and GIS, Fleet, OpEx, Enterprise Oracle and Control-M. At this time, the Power frames are 8 years old, and the AIX 5.3 operating system will NOT be supported next year (April 2014) causing some of the hosted applications to be non-compliant for SOX audits.

The primary goal of this project is to replace the aged IBM Power frames with the new standard Cisco Unified Computing System (UCS) servers and replace the AIX 5.3 operating system with Linux. The hosted applications will be migrated by the application owners in coordination with infrastructure personnel following a formal process of testing and acceptance.

**Physical Description:**

Utilize current server and storage standards  
 Maintain or improve the service levels and system performance  
 Maintain acceptable security Operating System configuration  
 Follow the development and change management policies and procedure

**Project Justification:**

Continued high performance and reliability on the new hardware and the new operation system.  
 Increased efficiencies in the deployment of the hardware.  
 Refresh of aging IBM Power frame hardware infrastructure with new Cisco UCS hardware.  
 Relieve crucial data center space by reducing 3 racks to 1 rack and provide reduced environmental requirements.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00770.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00770AE - PT81426 SERVER REPLACEMENT-AIX RETIREMENT

**Forecast Methodology:**

**Labor - Zero-Based**

The forecast is based upon the current project timeline.

**Non-Labor - Zero-Based**

The forecast is based upon the current project timeline.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00770AE**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770AE - PT81426 SERVER REPLACEMENT-AIX RETIREMENT  
 Workpaper Detail: 00770AE.001 - AIX  
 In-Service Date: 03/31/2014  
 Description:

| Forecast In 2013 \$(000) |              |              |            |          |  |
|--------------------------|--------------|--------------|------------|----------|--|
| Years                    |              | 2014         | 2015       | 2016     |  |
| Labor                    |              | 502          | 227        | 0        |  |
| Non-Labor                |              | 1,849        | 320        | 0        |  |
| NSE                      |              | 0            | 0          | 0        |  |
|                          | <b>Total</b> | <b>2,351</b> | <b>547</b> | <b>0</b> |  |
| FTE                      |              | 4.9          | 2.2        | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00770AF - PT81433 Enterprise Voice System Refresh**



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770AF - PT81433 Enterprise Voice System Refresh

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016     |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 119               | 0        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 95                | 0        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>214</b>        | <b>0</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 1.2               | 0.0      | 0.0      |

**Business Purpose:**

The Enterprise Voice system provides telephony services to SDG&E, SoCal Gas, corporate center and some Sempra U.S. Gas & Power clients in the U.S. This system was originally installed in 2008 and comprises of 100% Avaya hardware and software. Due to the age of the system, 75% of the components are currently out of support putting the system at risk of increased outage frequency and duration. Currently, Avaya, will provide "best effort" support in the event of an outage. However, they do not maintain an inventory of replacement parts for end of support components, putting our system availability at risk in the event of an outage and a replacement part is not available. In order to avoid potential telephony system interruption, Sempra should upgrade the Enterprise Voice system.

This project will upgrade the following systems:

- Avaya Communication Manager, the core of the telephony system (minus components that increase O&M)
- Avaya Call Management System (CMS), which provides core PBX (private branch exchange) reporting
- Avaya Modular Messaging, which provides voice mail services to end users

**Physical Description:**

The Enterprise Voice system provides telephony services to SDG&E, SoCal Gas, corporate center and some Sempra U.S. Gas & Power clients in the U.S. This system was originally installed in 2008 and comprises of 100% Avaya hardware and software. Due to the age of the system, 75% of the components are currently out of support putting the system at risk of increased outage frequency and duration. Currently, Avaya, will provide "best effort" support in the event of an outage. However, they do not maintain an inventory of replacement parts for end of support components, putting our system availability at risk in the event of an outage and a replacement part is not available. In order to avoid potential telephony system interruption, Sempra should upgrade the Enterprise Voice system.

This project will upgrade the following systems:

- Avaya Communication Manager, the core of the telephony system (minus components that increase O&M)
- Avaya Call Management System (CMS), which provides core PBX (private branch exchange) reporting
- Avaya Modular Messaging, which provides voice mail services to end users

**Project Justification:**

Provide a vendor supported Enterprise Voice System which is more reliable with reduced risk of outages  
 Allows SoCal Gas dispatch centers the flexibility to move personnel and transfer calls in the event of an emergency, as part of their disaster recovery and business resumption plans  
 •Allows SoCal Gas dispatch centers to reassign internal call routing without requiring IT manual intervention to change the backend system.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00770.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00770AF - PT81433 Enterprise Voice System Refresh

**Forecast Methodology:**

**Labor - Zero-Based**

The forecast is based upon the current project timeline.

**Non-Labor - Zero-Based**

The forecast is based upon the current project timeline.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00770AF**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770AF - PT81433 Enterprise Voice System Refresh  
 Workpaper Detail: 00770AF.001 - Enterprise Voice System Refresh  
 In-Service Date: 03/31/2014  
 Description:

| Forecast In 2013 \$(000) |            |          |          |  |
|--------------------------|------------|----------|----------|--|
| Years                    | 2014       | 2015     | 2016     |  |
| Labor                    | 119        | 0        | 0        |  |
| Non-Labor                | 95         | 0        | 0        |  |
| NSE                      | 0          | 0        | 0        |  |
| <b>Total</b>             | <b>214</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 1.2        | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00770AG - ROWS Refresh Out of Warranty Servers.**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770AG - ROWS Refresh Out of Warranty Servers.

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |              |            |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|--------------|------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015         | 2016       |
| <b>Years</b>    |            |                   |          |          |          |          |                   |              |            |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 648               | 710          | 295        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 3,872             | 1,084        | 400        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0            | 0          |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>4,520</b>      | <b>1,794</b> | <b>695</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 6.4               | 7.0          | 2.9        |

**Business Purpose:**

There are in excess of 2,850 physical servers of varying ages that make up our distributed environment in Rancho Bernardo, Monterey Park Data centers and other distributed locations. These servers are dedicated to specific purposes – Applications, Databases and Network Management.

Significant number of these servers (1,503 servers) have reached their out-of-warranty state of support from the vendor and/or end of life of the operating system (Windows Server 2003) which requires migration to a new server and supported version of the Microsoft Windows Operating System. The scope of this project will cover the 426 out-of-warranty servers and the 1,077 servers that require migration from Windows Server 2003 to a current Windows Server operating system.

The out-of-warranty servers have reached their useful technology life and are subject to hardware and operating system failure. They are covered by extended vendor support at significant additional cost of \$794K over a three year period. In replacing these out of warranty servers and end of operating system life for servers with new Intel based servers, this refresh project will address the additional support costs of out of warranty hardware and mitigate the risk of hardware and operating system failures.

**Physical Description:**

Provide reliable and supported server infrastructure to host applications  
 Provide stable operating system configuration  
 Continue to provide high availability for critical production systems  
 Minimize down time to the business application users  
 Take advantage of established application maintenance windows for migrations

**Project Justification:**

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00770.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00770AG - ROWS Refresh Out of Warranty Servers.

Implementation of the new server environment will eliminate the extended server support costs. The project will standardize on a current Microsoft Windows Server operating system.

The new servers will be virtualized, installed with a new supported operating system and optimized for simplified disaster recovery capabilities. Additional benefits include centralized server provisioning, reduced overall power consumption and reduced datacenter floor footprint.

The project is expected to reduce hardware maintenance by \$2,087K over the 5 year period. These savings have been captured in the business case budget spreadsheet. Additionally, the project allows the business to avoid a minimum of \$200K in extended support costs for Windows Server 2003 operating system in 2015, \$400K in 2016 and \$600K in 2017. These potential savings have not been captured in the business case.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00770.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00770AG - ROWS Refresh Out of Warranty Servers.

**Forecast Methodology:**

**Labor - Zero-Based**

The forecast is based upon the current project timeline.

**Non-Labor - Zero-Based**

The forecast is based upon the current project timeline.

**NSE - Zero-Based**

N/A



**Beginning of Workpaper Sub Details for  
Workpaper Group 00770AG**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770AG - ROWS Refresh Out of Warranty Servers.  
 Workpaper Detail: 00770AG.001 - ROWS Refresh Out of Warranty Servers.  
 In-Service Date: 12/31/2014  
 Description:

| Forecast In 2013 \$(000) |              |          |          |  |
|--------------------------|--------------|----------|----------|--|
| Years                    | 2014         | 2015     | 2016     |  |
| Labor                    | 648          | 0        | 0        |  |
| Non-Labor                | 3,872        | 0        | 0        |  |
| NSE                      | 0            | 0        | 0        |  |
| <b>Total</b>             | <b>4,520</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 6.4          | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770AG - ROWS Refresh Out of Warranty Servers.  
 Workpaper Detail: 00770AG.002 - s  
 In-Service Date: 12/31/2015  
 Description:

| Forecast In 2013 \$(000) |              |          |              |          |
|--------------------------|--------------|----------|--------------|----------|
|                          | Years        | 2014     | 2015         | 2016     |
| Labor                    |              | 0        | 710          | 0        |
| Non-Labor                |              | 0        | 1,084        | 0        |
| NSE                      |              | 0        | 0            | 0        |
|                          | <b>Total</b> | <b>0</b> | <b>1,794</b> | <b>0</b> |
| FTE                      |              | 0.0      | 7.0          | 0.0      |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770AG - ROWS Refresh Out of Warranty Servers.  
 Workpaper Detail: 00770AG.003 - 3  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |          |          |            |  |
|--------------------------|----------|----------|------------|--|
| Years                    | 2014     | 2015     | 2016       |  |
| Labor                    | 0        | 0        | 295        |  |
| Non-Labor                | 0        | 0        | 400        |  |
| NSE                      | 0        | 0        | 0          |  |
| <b>Total</b>             | <b>0</b> | <b>0</b> | <b>695</b> |  |
| FTE                      | 0.0      | 0.0      | 2.9        |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00770AH - PT201410 SEu Call Recording Replacement**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770AH - PT201410 SEu Call Recording Replacement

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |          |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 136               | 0        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 650               | 0        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>786</b>        | <b>0</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 1.3               | 0.0      | 0.0      |

**Business Purpose:**

The Enterprise Call Recording Systems are aging and at the end of manufacturer support. The proposed option will be to develop a RFP to look at other Call Recording solutions.

**Physical Description:**

Scope of the project will be to replace the current Enterprise Call Recording systems using technology that will benefit the Company for the future.

**Project Justification:**

Upgrading the systems will ensure that the call recording systems are supportable by the manufacturer. System reliability and availability will be assured with continued manufacturer support.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00770.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00770AH - PT201410 SEu Call Recording Replacement

**Forecast Methodology:**

**Labor - Zero-Based**

Estimating the costs for multiple sites based on a previous quote for 1 site from the vendor NICE on their call recording system.

**Non-Labor - Zero-Based**

Estimating the costs for multiple sites based on a previous quote for 1 site from the vendor NICE on their call recording system.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00770AH**



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770AH - PT201410 SEu Call Recording Replacement  
 Workpaper Detail: 00770AH.001 - SEu Call Recording Replacement  
 In-Service Date: 12/31/2014  
 Description:

| Forecast In 2013 \$(000) |              |            |          |          |  |
|--------------------------|--------------|------------|----------|----------|--|
| Years                    |              | 2014       | 2015     | 2016     |  |
| Labor                    |              | 136        | 0        | 0        |  |
| Non-Labor                |              | 650        | 0        | 0        |  |
| NSE                      |              | 0          | 0        | 0        |  |
|                          | <b>Total</b> | <b>786</b> | <b>0</b> | <b>0</b> |  |
| FTE                      |              | 1.3        | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00770AI - PT201433 Backup Services Enhancement**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770AI - PT201433 Backup Services Enhancement

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |          |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 99                | 0        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 750               | 0        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>849</b>        | <b>0</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 1.0               | 0.0      | 0.0      |

**Business Purpose:**

The project will upgrade the aging enterprise distributed backup environment with additional media servers and backup storage capacity at Rancho Bernardo and Monterey Park data centers. The project will also create a stand-alone SAP domain to enable self service, prevent general outages, and position the backup infrastructure to be less reactive and more strategic in how it supports business requirements. Ultimately the new infrastructure will eliminate bottlenecks and better distribute the backup footprint of the environment. Specifically, this project plans to accomplish the following objectives:

- Reduce the backup window from 24 hours to 18 hours to allow room to run on-going data restoration and system maintenance activities,
- Reduce the ratio down to an approximate 150:1 client-to-media server,
- Expand the backend storage, storage area network, and IP network capacity to provide reliable backup services to approximately 3,000 clients (systems) in the distributed environment,
- Establish a comprehensive backup Disaster Recovery strategy for Monterey Park without the reliance solely on the Rancho Bernardo master server,
- Achieve a 98% success rate (from 94%) for backup jobs which translates to the prevention of thousands of failed backup jobs monthly,
- Install additional 10 gigabit Ethernet connectivity to provide additional backup infrastructure bandwidth,
- Review and develop new backup policies and optimize through attrition.

**Physical Description:**

SAP will have its own domain for self –service, isolate SAP from general outages, and reduce SAP reliance on Computing Infrastructure for operation support.

Will take 18 hours to backup the entire enterprise leaving time for data restore activities. Developed backup service tiers to better align with client needs and requirements.

Monterey Park will have its own master server for Disaster Recovery.

This will help spread the data flow to the backend storage utilizing the Network and SAN fabric to help maintain the backup window.

Expand functionality into the SAP, RB DMZ, and General RB domain to support DR at MPK. Removing reliance on tapes for Disaster Recovery. (Tape storage may still be required to meet offsite storage requirements)

The new Qfabric model will use a public only interface with VLAN tagging to channel the backup traffic to the media servers in order to take advantage of the Data Center's future network.

Offsite media would be transported to MPK (instead of Iron Mountain) and stored in the tape library. When a restore is required the data would traverse the network from MPK.

The project plans to create a backup infrastructure and reassess our policies & governance. Specifically, we plan to improve the naming standards and governance for Backup Level of Service.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00770.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00770AI - PT201433 Backup Services Enhancement

**Project Justification:**

Transform an 8 year-old backup infrastructure to address persistent capacity, reliability, and performance issues, such as:  
Reduce backup windows from 24 hours to 18 hours to allow for necessary maintenance and restoration activities  
Increase backup job success rate to 98% and avoid around 3720 failed backup jobs per month or 44,640 failed jobs per year  
Ensure all in-scope SOX servers are being backed up and restored properly and avoid job failures  
Establish a well-defined enterprise-wide Disaster Recovery process (including out-of-state data center locations):  
Enable Monterey Park to have independent backup Disaster Recovery capabilities  
Reduce the reliance on physical tape for Disaster Recovery processes  
Potential operating cost savings of \$30,000/year by eliminating Iron Mountain offsite storage services (2015 and on)  
Enable end-user self-service allowing Computing Infrastructure resources to focus on-going backup environment tuning and optimization (20% of two resources/year) and additional allocated time to capital projects  
Position backup services for future enhancements as the Data Center technology transformations

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00770.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00770AI - PT201433 Backup Services Enhancement

**Forecast Methodology:**

**Labor - Zero-Based**

Based on internal labor hours estimate

**Non-Labor - Zero-Based**

Based on vendor estimate

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00770AI**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770AI - PT201433 Backup Services Enhancement  
 Workpaper Detail: 00770AI.001 - Backup Services Enhancement  
 In-Service Date: 12/31/2014  
 Description:

| Forecast In 2013 \$(000) |            |          |          |  |
|--------------------------|------------|----------|----------|--|
| Years                    | 2014       | 2015     | 2016     |  |
| Labor                    | 99         | 0        | 0        |  |
| Non-Labor                | 750        | 0        | 0        |  |
| NSE                      | 0          | 0        | 0        |  |
| <b>Total</b>             | <b>849</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 1.0        | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00770B - PT14835 Mobile Device Management Infrastructure**



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770B - PT14835 Mobile Device Management Infrastructure

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |           |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|-----------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015      | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |           |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 266               | 87        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 757               | 0         | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0         | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1,023</b>      | <b>87</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 2.6               | 0.9       | 0.0      |

**Business Purpose:**

Sempra does not have company-wide BYOD solution currently in place; however, there are currently 6000+ personally owned devices attached to the Exchange email system and our internal wi-fi network. None of these devices are currently managed, therefore company data is at risk. Additionally, employees' personal data on these devices is at risk, should the company elect to "wipe" a device. This project will implement a solution to manage these devices to safeguard company data.

**Physical Description:**

The scope will include infrastructure and licensing to cover all 6000+ devices into a centrally managed MDM solution and factor in potential growth due to conversion of existing BlackBerry devices to potentially BYOD or other technologies requiring MDM.

**Project Justification:**

Protect company data; reduce account lockouts caused by password resets; isolate company data from personal data on devices; potential avoidance of legal/regulatory ramifications caused by sensitive data being compromised.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00770.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00770B - PT14835 Mobile Device Management Infrastructure

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Based on existing licences required and license costs

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00770B**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770B - PT14835 Mobile Device Management Infrastructure  
 Workpaper Detail: 00770B.001 - Sempra does not have company-wide BYOD solution currently in place; however, there are  
 In-Service Date: 01/31/2015  
 Description:

| Forecast In 2013 \$(000) |              |           |          |  |
|--------------------------|--------------|-----------|----------|--|
| Years                    | 2014         | 2015      | 2016     |  |
| Labor                    | 266          | 87        | 0        |  |
| Non-Labor                | 757          | 0         | 0        |  |
| NSE                      | 0            | 0         | 0        |  |
| <b>Total</b>             | <b>1,023</b> | <b>87</b> | <b>0</b> |  |
| FTE                      | 2.6          | 0.9       | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00770D - PT14839 Logging Infrastructure Refresh**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770D - PT14839 Logging Infrastructure Refresh

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |              |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|--------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015         | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |              |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 144          | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 2,625        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0            | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>2,769</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 1.4          | 0.0      |

**Business Purpose:**

This project will replace the current core security log monitoring and incident investigation infrastructure which has reached end of life and end of support from the manufacturer. Replacement of this core infrastructure will occur at the company data center facilities. This investment will compliment recent investments in logging capabilities at critical infrastructure facilities by replacing the data center core systems to enhance reliability, increase capacity, and reduce ongoing support costs. The project will purchase new servers and software licensing to sustain current load, allow for anticipated growth, allow for long term archival of security data, reduce data retrieval times of first responders, and efficiently analyze long term trends in archived security log data.

**Physical Description:**

Purchase and implement servers, storage, and software licensing within the company's primary data centers

**Project Justification:**

Production Log Management infrastructure is end of life and wil not longer be supported.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00770.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00770D - PT14839 Logging Infrastructure Refresh

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00770D**



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770D - PT14839 Logging Infrastructure Refresh  
 Workpaper Detail: 00770D.001 - Production Log Management infrastructure is end of life and wil not longer be supported  
 In-Service Date: 12/31/2015  
 Description:

| Forecast In 2013 \$(000) |              |          |              |          |  |
|--------------------------|--------------|----------|--------------|----------|--|
| Years                    |              | 2014     | 2015         | 2016     |  |
| Labor                    |              | 0        | 144          | 0        |  |
| Non-Labor                |              | 0        | 2,625        | 0        |  |
| NSE                      |              | 0        | 0            | 0        |  |
|                          | <b>Total</b> | <b>0</b> | <b>2,769</b> | <b>0</b> |  |
| FTE                      |              | 0.0      | 1.4          | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00770E - PT14846 Gas SCADA Perimeter Refresh**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770E - PT14846 Gas SCADA Perimeter Refresh

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |          |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 104               | 0        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 725               | 0        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>829</b>        | <b>0</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 1.0               | 0.0      | 0.0      |

**Business Purpose:**

This project will implement a new log management system for all Gas SCADA network and server infrastructure that produce log information. This system will use established hardware and software product standards and configuration which will include new servers, storage and Splunk licensing. This new log management system will monitor all servers, workstations, and network devices in the Gas SCADA environment. Information Security will be involved in the review and monitoring of logging configurations and determining that all systems are appropriately configured.

**Physical Description:**

The replacement of Information Security Managed Firewalls (4) , Intrusion Prevention Devices (4) protecting the control networks at the Spence and Beaumont Sites.

**Project Justification:**

The project will resolve and close Audit 13-323 MCA C relating to Gas SCADA systems.  
 C. Monitoring and Review of System Logs  
 A centralized system log management system has not been implemented and continuous monitoring of all servers and application logs within the SCADA network is not performed. Currently system and application owners only review log files for troubleshooting purposes. The lack of continuous monitoring could result in security issues and trends not being addressed.  
 Recommendations:  
 1. Implement a centralized log management system such as Splunk, Logrhythm or ArcSight.  
 2. Require the active monitoring and weekly review of all system log files for SCADA connected devices and applications by the system and application owners, with the prompt addressing of any issues identified.  
 New capability to log and monitor access controls for Gas SCADA networks which will reduce the risk of unauthorized access and service disruption to the Gas SCADA networks.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00770.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00770E - PT14846 Gas SCADA Perimeter Refresh

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00770E**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770E - PT14846 Gas SCADA Perimeter Refresh  
 Workpaper Detail: 00770E.001 - The IS/IT equipment supporting the security of the Spence and Beaumont Gas SCADA contro  
 In-Service Date: 12/31/2014  
 Description:

| Forecast In 2013 \$(000) |              |            |          |          |  |
|--------------------------|--------------|------------|----------|----------|--|
| Years                    |              | 2014       | 2015     | 2016     |  |
| Labor                    |              | 104        | 0        | 0        |  |
| Non-Labor                |              | 725        | 0        | 0        |  |
| NSE                      |              | 0          | 0        | 0        |  |
|                          | <b>Total</b> | <b>829</b> | <b>0</b> | <b>0</b> |  |
| FTE                      |              | 1.0        | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00770H - PT14889 SEu Enterprise Call Recording Refresh**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770H - PT14889 SEu Enterprise Call Recording Refresh

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |              | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |          |
|-----------------|--------------|-------------------|----------|----------|----------|----------|-------------------|----------|----------|
|                 |              | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016     |
|                 | <b>Years</b> |                   |          |          |          |          |                   |          |          |
| Labor           | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 73                | 0        | 0        |
| Non-Labor       | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 268               | 0        | 0        |
| NSE             | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0        |
|                 | <b>Total</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>341</b>        | <b>0</b> | <b>0</b> |
| FTE             | Zero-Based   | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.7               | 0.0      | 0.0      |

**Business Purpose:**

The Enterprise Call Recording Systems are aging and at the end of manufacturer support. The proposed option will be to develop a RFP to look at other Call Recording solutions.

**Physical Description:**

Scope of the project will be to replace the current Enterprise Call Recording systems using technology that will benefit the Company for the future.

**Project Justification:**

Upgrading the systems will ensure that the call recording systems are supportable by the manufacturer. System reliability and availability will be assured with continued manufacturer support.

*Note: Totals may include rounding differences.*



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00770.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00770H - PT14889 SEu Enterprise Call Recording Refresh

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00770H**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770H - PT14889 SEu Enterprise Call Recording Refresh  
 Workpaper Detail: 00770H.001 - The Enterprise Call Recording Systems Refresh  
 In-Service Date: 08/31/2014  
 Description:

| Forecast In 2013 \$(000) |              |            |          |          |  |
|--------------------------|--------------|------------|----------|----------|--|
| Years                    |              | 2014       | 2015     | 2016     |  |
| Labor                    |              | 73         | 0        | 0        |  |
| Non-Labor                |              | 268        | 0        | 0        |  |
| NSE                      |              | 0          | 0        | 0        |  |
|                          | <b>Total</b> | <b>341</b> | <b>0</b> | <b>0</b> |  |
| FTE                      |              | 0.7        | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00770K - PT15844 Web Application Firewall**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770K - PT15844 Web Application Firewall

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |              |      |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|--------------|------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015         | 2016 |
| Years           |            |                   |          |          |          |          |                   |              |      |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 146          |      |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 1,365        |      |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0            |      |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>1,511</b> |      |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 1.4          |      |

**Business Purpose:**

Sempra uses web applications across multiple business units and multiple compliance areas. As changes and updates occur to these web applications and as malicious technology advances we are vulnerable to attacks to and through these systems. Implementing a Web Application Firewall (WAF) would be an added layer of protection to block and alert on these attacks. The web application firewall technology would also provide compliance for multiple regulations, ensuring we are compliant in defending our systems.

**Physical Description:**

This project would implement a High Availability configuration located at both the MPK and RB datacenters to maintain the SLA and uptime of systems using the WAF. The placement would be in the Web Transaction Zone and we would look to initially route web servers that handle sensitive data or that connect to systems that contain sensitive data through the WAF. Other systems would then be added as capacity allows. This system would integrate with Enterprise logging, Security Alerting, and the current Layer 7 systems for Web Services inspection.

**Project Justification:**

Placement of Web Application Firewalls at the RB and MPK perimeters to monitor both requests from the internet and the internal corporate network for attacks against those networks.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00770.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00770K - PT15844 Web Application Firewall

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00770K**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770K - PT15844 Web Application Firewall  
 Workpaper Detail: 00770K.001 - Sempra currently uses web applications across multiple business units and multiple comp  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |          |              |  |
|--------------------------|--------------|----------|----------|--------------|--|
| Years                    |              | 2014     | 2015     | 2016         |  |
| Labor                    |              | 0        | 0        | 146          |  |
| Non-Labor                |              | 0        | 0        | 1,365        |  |
| NSE                      |              | 0        | 0        | 0            |  |
|                          | <b>Total</b> | <b>0</b> | <b>0</b> | <b>1,511</b> |  |
| FTE                      |              | 0.0      | 0.0      | 1.4          |  |

*Note: Totals may include rounding differences.*



**Beginning of Workpaper Group**  
**00770L - PT15874 Enterprise Risk and Compliance (eGRC) Archer expansion**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770L - PT15874 Enterprise Risk and Compliance (eGRC) Archer expansion

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |      |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016 |
| <b>Years</b>    |            |                   |          |          |          |          |                   |            |      |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 515        |      |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 144        |      |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          |      |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>659</b> |      |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 5.0        |      |

**Business Purpose:**

Add new functionality Archer Security Compliance System and:

- \* Affiliate Compliance module
- \* Records Management module
- \* Additional Customer Privacy modules
- \* Additional NERC CIP modules
- \* Supply Management 3rd party vendor integration

**Physical Description:**

In addition to new Archer modules to expand functionality to new business areas this project will deliver a five year roadmap for enterprise risk and compliance (eGRC)

**Project Justification:**

Cost avoidance for Customer Privacy, decrease additional resource requirements by one (1) FTE.  
 Project will provide additional efficiencies in Affiliate Compliance and Records Management.  
 Third party vendor integration will increase security of information exchanges.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00770.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00770L - PT15874 Enterprise Risk and Compliance (eGRC) Archer expansion

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00770L**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770L - PT15874 Enterprise Risk and Compliance (eGRC) Archer expansion  
 Workpaper Detail: 00770L.001 - Add new functionality Archer Security Compliance System  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |          |            |  |
|--------------------------|--------------|----------|----------|------------|--|
| Years                    |              | 2014     | 2015     | 2016       |  |
| Labor                    |              | 0        | 0        | 515        |  |
| Non-Labor                |              | 0        | 0        | 144        |  |
| NSE                      |              | 0        | 0        | 0          |  |
|                          | <b>Total</b> | <b>0</b> | <b>0</b> | <b>659</b> |  |
| FTE                      |              | 0.0      | 0.0      | 5.0        |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00770M - PT15879 Enterprise Social Computing**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770M - PT15879 Enterprise Social Computing

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |              | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |            |
|-----------------|--------------|-------------------|----------|----------|----------|----------|-------------------|----------|------------|
|                 |              | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016       |
|                 | <b>Years</b> |                   |          |          |          |          |                   |          |            |
| Labor           | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 162        |
| Non-Labor       | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 428        |
| NSE             | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0          |
|                 | <b>Total</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>0</b> | <b>590</b> |
| FTE             | Zero-Based   | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.0      | 1.6        |

**Business Purpose:**

As Social Computing becomes the leading method for communications, collaboration, and peer interaction, the business is looking to leverage this technology to provide access to key resources, tools and knowledge, that will enable business processes (i.e. mobile workforce), facilitate cross-departmental interactions, accelerate business innovation and increase employee productivity.

**Physical Description:**

Implementation of an premise Social Computing system that includes collaborative workspace, profile pages, interactive video-chat and internal Wiki

**Project Justification:**

- Reduce staff time spent looking for the information and expertise needed to get their jobs done
- Increase the ability to obtain new ideas and bring new offerings to the business by leveraging “people capital”
- Reduce time to keep people informed, trained and aligned by eliminating human latency

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00770.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00770M - PT15879 Enterprise Social Computing

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A



**Beginning of Workpaper Sub Details for  
Workpaper Group 00770M**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770M - PT15879 Enterprise Social Computing  
 Workpaper Detail: 00770M.001 - As Social Computing becomes the leading method for communications, collaboration, and  
 In-Service Date: 06/30/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |          |            |
|--------------------------|--------------|----------|----------|------------|
|                          | Years        | 2014     | 2015     | 2016       |
| Labor                    |              | 0        | 0        | 162        |
| Non-Labor                |              | 0        | 0        | 428        |
| NSE                      |              | 0        | 0        | 0          |
|                          | <b>Total</b> | <b>0</b> | <b>0</b> | <b>590</b> |
| FTE                      |              | 0.0      | 0.0      | 1.6        |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00770N - PT15880 ITCS - App-V and UE-V**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770N - PT15880 ITCS - App-V and UE-V

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |              |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|--------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016         |
| <b>Years</b>    |            |                   |          |          |          |          |                   |            |              |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 348        | 696          |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 260        | 600          |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0            |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>608</b> | <b>1,296</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 3.4        | 6.8          |

**Business Purpose:**

Infrastructure Desktop Engineering Application Virtualization & User Experience Virtualization  
 It takes too long to receive services and service experience varies. No Self Service. No Depot Service. Wait time from hours can be reduced to minutes. (See Description Continued)

Client Self Service (CSS) through Application Virtualization (App-V). Significantly reduces desktop services calls and FTE's.

**Physical Description:**

All Virtual Desktops and Physical Desktops / Laptops.  
 Architecture & Design, Image, Operating System & Foundation Application Patching, Disaster Recovery Plan with Policy Process & Procedure, Transformation with Scripts for Sustaining Operations, Application Packaging & Delivery, Profile & Application Versioning Management.

**Project Justification:**

Client enhanced services:  
 Revert host device to pristine in 30 minutes (or less)  
 Access to the same device regardless of physical device or location.  
 Speed Increase to network resources from a local (LAN) well attached VDI as opposed to a distant (slow)

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00770.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00770N - PT15880 ITCS - App-V and UE-V

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00770N**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770N - PT15880 ITCS - App-V and UE-V  
 Workpaper Detail: 00770N.001 - Infrastructure Desktop Engineering Application Virtualization & User Experience Virtual  
 In-Service Date: 12/31/2015  
 Description:

| Forecast In 2013 \$(000) |              |          |            |          |  |
|--------------------------|--------------|----------|------------|----------|--|
| Years                    |              | 2014     | 2015       | 2016     |  |
| Labor                    |              | 0        | 348        | 0        |  |
| Non-Labor                |              | 0        | 260        | 0        |  |
| NSE                      |              | 0        | 0          | 0        |  |
|                          | <b>Total</b> | <b>0</b> | <b>608</b> | <b>0</b> |  |
| FTE                      |              | 0.0      | 3.4        | 0.0      |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770N - PT15880 ITCS - App-V and UE-V  
 Workpaper Detail: 00770N.002 - Infrastructure Desktop Engineering Application Virtualization & User Experience Virtual  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |          |              |  |
|--------------------------|--------------|----------|----------|--------------|--|
| Years                    |              | 2014     | 2015     | 2016         |  |
| Labor                    |              | 0        | 0        | 696          |  |
| Non-Labor                |              | 0        | 0        | 600          |  |
| NSE                      |              | 0        | 0        | 0            |  |
|                          | <b>Total</b> | <b>0</b> | <b>0</b> | <b>1,296</b> |  |
| FTE                      |              | 0.0      | 0.0      | 6.8          |  |

*Note: Totals may include rounding differences.*



**Beginning of Workpaper Group**  
**007700 - PT15881 SCG Video-enabled Collaboration Room Upgrade**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 007700 - PT15881 SCG Video-enabled Collaboration Room Upgrade

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |            |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 108        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 286        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>394</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 1.1        | 0.0      |

**Business Purpose:**

Sempra's current video conferencing enabled rooms (Polycom not TelePresence) have outdated equipment that is out of support, out of warranty and difficult to use. This project will implement a solution to manage these devices.

**Physical Description:**

The scope will include infrastucture to upgrade the video conferencing equipment in 30 SCG video conferencing rooms. The new equipment will integrate with existing and proposed solutions (Lync and TelePresence).

**Project Justification:**

Productive client interactions between geographically distant conf rooms; travel time/expense avoidance for employees; integrations with mobile users; framework to allow collaboration with external entities.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00770.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 007700 - PT15881 SCG Video-enabled Collaboration Room Upgrade

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 007700**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 007700 - PT15881 SCG Video-enabled Collaboration Room Upgrade  
 Workpaper Detail: 007700.001 - Sempra's current video conferencing enabled rooms (Polycom not TelePresence) have outda  
 In-Service Date: 06/30/2015  
 Description:

| Forecast In 2013 \$(000) |              |          |            |          |  |
|--------------------------|--------------|----------|------------|----------|--|
| Years                    |              | 2014     | 2015       | 2016     |  |
| Labor                    |              | 0        | 108        | 0        |  |
| Non-Labor                |              | 0        | 286        | 0        |  |
| NSE                      |              | 0        | 0          | 0        |  |
|                          | <b>Total</b> | <b>0</b> | <b>394</b> | <b>0</b> |  |
| FTE                      |              | 0.0      | 1.1        | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00770P - PT15882 SEu TelePresence Upgrade**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770P - PT15882 SEu TelePresence Upgrade

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |              | Adjusted Recorded |          |          |          |          | Adjusted Forecast |              |          |
|-----------------|--------------|-------------------|----------|----------|----------|----------|-------------------|--------------|----------|
|                 |              | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015         | 2016     |
|                 | <b>Years</b> |                   |          |          |          |          |                   |              |          |
| Labor           | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 107          | 0        |
| Non-Labor       | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 990          | 0        |
| NSE             | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 0            | 0        |
|                 | <b>Total</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>1,097</b> | <b>0</b> |
| FTE             | Zero-Based   | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 1.0          | 0.0      |

**Business Purpose:**

Sempra's current TelePresence equipment will require an upgrade to current and supported models. This project will upgrade this equipment so that we can continue to leverage our previous and existing capital investments.

**Physical Description:**

The scope will include infrastructure to upgrade the backend TelePresence including what is necessary to maintain integration with disparate systems (Lync, Polycom, Avaya).

**Project Justification:**

Productive client interactions between geographically distant conf rooms; travel time/expense avoidance for employees; integrations with mobile users; framework to allow collaboration with external entities.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00770.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00770P - PT15882 SEu TelePresence Upgrade

**Forecast Methodology:**

**Labor - Zero-Based**

Based on general HW list price estimates, and initial install of TelePresence.

**Non-Labor - Zero-Based**

Based on general HW list price estimates, and initial install of TelePresence.

**NSE - Zero-Based**

N/A



**Beginning of Workpaper Sub Details for  
Workpaper Group 00770P**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770P - PT15882 SEu TelePresence Upgrade  
 Workpaper Detail: 00770P.001 - Sempra's current TelePresence equipment will require an upgrade to current and supporte  
 In-Service Date: 06/30/2015  
 Description:

| Forecast In 2013 \$(000) |              |          |              |          |  |
|--------------------------|--------------|----------|--------------|----------|--|
| Years                    |              | 2014     | 2015         | 2016     |  |
| Labor                    |              | 0        | 107          | 0        |  |
| Non-Labor                |              | 0        | 990          | 0        |  |
| NSE                      |              | 0        | 0            | 0        |  |
|                          | <b>Total</b> | <b>0</b> | <b>1,097</b> | <b>0</b> |  |
| FTE                      |              | 0.0      | 1.0          | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00770Q - PT15890 SCG Infrastructure Rooms Compton Headquarter**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770Q - PT15890 SCG Infrastructure Rooms Compton Headquarter

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |            |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016       |
| <b>Years</b>    |            |                   |          |          |          |          |                   |          |            |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 52         |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 65         |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0          |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>0</b> | <b>117</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.0      | 0.5        |

**Business Purpose:**

The Compton MDF and Server Room is significantly overdue for a cleanup and remodel. The racks are full, there is no room for expansion.

**Physical Description:**

Multi-phase project. Align racks in common rows, add cable management. Retire old server cabinets, move SCADA hardware to cabinets. Relocate electrical. Remove and replace flooring. Significant abatement in this project.

**Project Justification:**

Better able to manage MDF / Server Room by making space for switches, patch panels and cable management. Making separate row for the MDF, IDF and Servers.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00770.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00770Q - PT15890 SCG Infrastructure Rooms Compton Headquarter

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00770Q**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770Q - PT15890 SCG Infrastructure Rooms Compton Headquarter  
 Workpaper Detail: 00770Q.001 - The Compton MDF and Server Room is significantly overdue for a cleanup and remodel. The  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |          |          |            |  |
|--------------------------|----------|----------|------------|--|
| Years                    | 2014     | 2015     | 2016       |  |
| Labor                    | 0        | 0        | 52         |  |
| Non-Labor                | 0        | 0        | 65         |  |
| NSE                      | 0        | 0        | 0          |  |
| <b>Total</b>             | <b>0</b> | <b>0</b> | <b>117</b> |  |
| FTE                      | 0.0      | 0.0      | 0.5        |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00770R - PT15896 SE SAN Storage Expansion**



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770R - PT15896 SE SAN Storage Expansion

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |              |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|--------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016         |
| <b>Years</b>    |            |                   |          |          |          |          |                   |          |              |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 52           |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 6,000        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0            |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>0</b> | <b>6,052</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.0      | 0.5          |

**Business Purpose:**

Expand SAN storage capacity that supports a majority of applications that reside in the enterprise. The additional capacity is required to keep pce with organic growth and small-to-medium sized projects.

**Physical Description:**

Purchase and install additional SAN storage capacity at Rancho Bernardo and Monterey Park Data Centers. SAN switches and SVC controllers will also have to be considered for purchase to allow for expansion of the SAN storage environments at RB and MPK.

**Project Justification:**

Having adequate SAN storage in inventory allows for timely turnaround for projects and requests.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00770.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00770R - PT15896 SE SAN Storage Expansion

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00770R**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770R - PT15896 SE SAN Storage Expansion  
 Workpaper Detail: 00770R.001 - Expand SAN storage capacity that supports a majority of applications that reside in the  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |          |              |  |
|--------------------------|--------------|----------|----------|--------------|--|
| Years                    |              | 2014     | 2015     | 2016         |  |
| Labor                    |              | 0        | 0        | 52           |  |
| Non-Labor                |              | 0        | 0        | 6,000        |  |
| NSE                      |              | 0        | 0        | 0            |  |
|                          | <b>Total</b> | <b>0</b> | <b>0</b> | <b>6,052</b> |  |
| FTE                      |              | 0.0      | 0.0      | 0.5          |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00770S - PT15899 SE 2015 VMware View Virtual Desktop Infrastructure**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770S - PT15899 SE 2015 VMware View Virtual Desktop Infrastructure

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |              |            |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|--------------|------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015         | 2016       |
| <b>Years</b>    |            |                   |          |          |          |          |                   |              |            |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 278          | 186        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 1,236        | 0          |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0            | 0          |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>1,514</b> | <b>186</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 2.7          | 1.8        |

**Business Purpose:**

Deploy an enterprise solution that will expand the existing hardware and software virtualized infrastructure. The current Citrix XenApp is an application-only delivery platform and is becoming outgrown. A new more robust virtualized solution is to be deployed.

**Physical Description:**

Evaluate VMware View, VDI solution, that will provide the business clients with enhanced accessibility, similar to Citrix with desktop-like features. The solution will provide more robust function and features (e.g. ease of use, ease of administration, and scalability). Project will provide a production environment to fully support day-to-day load. Additionally, deploy a DEV/QA/DR environment that will support 25%-50% of production.

**Project Justification:**

Centralized management for administration and security. More flexibility with accessing company resources. Add DEV/QA environment.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00770.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00770S - PT15899 SE 2015 VMware View Virtual Desktop Infrastructure

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00770S**



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770S - PT15899 SE 2015 VMware View Virtual Desktop Infrastructure  
 Workpaper Detail: 00770S.001 - Deploy an enterprise solution that will expand the existing hardware and software virtu  
 In-Service Date: 03/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |              |            |  |
|--------------------------|--------------|----------|--------------|------------|--|
| Years                    |              | 2014     | 2015         | 2016       |  |
| Labor                    |              | 0        | 278          | 186        |  |
| Non-Labor                |              | 0        | 1,236        | 0          |  |
| NSE                      |              | 0        | 0            | 0          |  |
|                          | <b>Total</b> | <b>0</b> | <b>1,514</b> | <b>186</b> |  |
| FTE                      |              | 0.0      | 2.7          | 1.8        |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00770T - PT15900 SCG Infrastructure Rooms (Anaheim IDF/Server Room)**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770T - PT15900 SCG Infrastructure Rooms (Anaheim IDF/Server Room)

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |           |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|-----------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015      | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |           |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 46        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 35        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0         | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>81</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.5       | 0.0      |

**Business Purpose:**

The Anaheim IDF/Server Room is significantly overdue for a cleanup and remodel. There are decades of abandoned cable under the floors and in the ceiling. Abandoned servers and server cabinets need to be removed. The room lacks necessary cable management. The raised floor is in need of repairs.

**Physical Description:**

Remove retired server cabinets. Move IDF racks away from wall about 4 feet so staff can get behind equipment. Add overhead cable tray and cable management. Add server switches to remaining server cabinets. Repair loose raise floor and replace damaged floor tiles. Rework electrical.

**Project Justification:**

Better able to manage IDF / Server Room by making space for switches, patch panels and cable management. Move servers to a higher speed backbone.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00770.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00770T - PT15900 SCG Infrastructure Rooms (Anaheim IDF/Server Room)

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00770T**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770T - PT15900 SCG Infrastructure Rooms (Anaheim IDF/Server Room)  
 Workpaper Detail: 00770T.001 - The Anaheim IDF/Server Room is significantly overdue for a cleanup and remodel. There  
 In-Service Date: 12/31/2015  
 Description:

| Forecast In 2013 \$(000) |              |          |           |          |  |
|--------------------------|--------------|----------|-----------|----------|--|
| Years                    |              | 2014     | 2015      | 2016     |  |
| Labor                    |              | 0        | 46        | 0        |  |
| Non-Labor                |              | 0        | 35        | 0        |  |
| NSE                      |              | 0        | 0         | 0        |  |
|                          | <b>Total</b> | <b>0</b> | <b>81</b> | <b>0</b> |  |
| FTE                      |              | 0.0      | 0.5       | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00770U - PT16892A SE Infrastructure Enabling Services (DNS, DHCP, NTP)**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770U - PT16892A SE Infrastructure Enabling Services (DNS, DHCP, NTP)

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |            |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016       |
| <b>Years</b>    |            |                   |          |          |          |          |                   |          |            |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0          |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 806        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0          |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>0</b> | <b>806</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.0      | 0.0        |

**Business Purpose:**

The project will refresh the existing hardware/software that is required for the administration, management, and the issuance of IP addresses.

**Physical Description:**

The project will refresh the existing hardware/software that is required for the administration, management, and the issuance of IP addresses.

**Project Justification:**

Project will update the infrastructure software to supportable version, enable better integration with private cloud and automation, reducing labor need.

*Note: Totals may include rounding differences.*



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00770.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00770U - PT16892A SE Infrastructure Enabling Services (DNS, DHCP, NTP)

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00770U**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770U - PT16892A SE Infrastructure Enabling Services (DNS, DHCP, NTP)  
 Workpaper Detail: 00770U.001 - This is a 2016 project on the SCG 5-year capital plan with an esimated cost of \$806K. T  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |          |          |            |  |
|--------------------------|----------|----------|------------|--|
| Years                    | 2014     | 2015     | 2016       |  |
| Labor                    | 0        | 0        | 0          |  |
| Non-Labor                | 0        | 0        | 806        |  |
| NSE                      | 0        | 0        | 0          |  |
| <b>Total</b>             | <b>0</b> | <b>0</b> | <b>806</b> |  |
| FTE                      | 0.0      | 0.0      | 0.0        |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00770V - PT16892B SE SCOM 2012 Upgrade**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770V - PT16892B SE SCOM 2012 Upgrade

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |            |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016       |
| <b>Years</b>    |            |                   |          |          |          |          |                   |          |            |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 371        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 200        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0          |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>0</b> | <b>571</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.0      | 3.6        |

**Business Purpose:**

Microsoft System Center 2012 is an integrated management platform that will allow efficient management tools to system administrators. It's used to monitor/alert on critical applications and processes running in the server environment, and manages automated server patching. Project Justification: Project will address issues with current set of server management tools. SCOM features many new and desired features including process automation, self service infrastructure, application diagnosis and centralized management for Wintel servers.. Current version is two releases behind, at end of life, no longer supported by Microsoft

**Physical Description:**

All viable Wintel servers will be included with an interface to SCOM 2012.

**Project Justification:**

Project will address issues with current set of server management tools. SCOM features many new and desired features including process automation, self service infrastructure, application diagnosis and centralized management for Wintel servers.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00770.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00770V - PT16892B SE SCOM 2012 Upgrade

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00770V**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770V - PT16892B SE SCOM 2012 Upgrade  
 Workpaper Detail: 00770V.001 - Microsoft System Center 2012 is an integrated management platform that will allow effic  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |          |          |            |  |
|--------------------------|----------|----------|------------|--|
| Years                    | 2014     | 2015     | 2016       |  |
| Labor                    | 0        | 0        | 371        |  |
| Non-Labor                | 0        | 0        | 200        |  |
| NSE                      | 0        | 0        | 0          |  |
| <b>Total</b>             | <b>0</b> | <b>0</b> | <b>571</b> |  |
| FTE                      | 0.0      | 0.0      | 3.6        |  |

*Note: Totals may include rounding differences.*



**Beginning of Workpaper Group**  
**00770X - PT16899B SE 2016 VMware View Virtual Desktop Infrastructure**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770X - PT16899B SE 2016 VMware View Virtual Desktop Infrastructure

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |              |      |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|--------------|------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015         | 2016 |
| <b>Years</b>    |            |                   |          |          |          |          |                   |              |      |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 232          |      |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 2,400        |      |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0            |      |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>2,632</b> |      |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 2.3          |      |

**Business Purpose:**

Deploy an enterprise solution that will expand and replace the existing hardware and software virtual desktop infrastructure. The current Citrix XenApp is an application-only delivery platform and is becoming outgrown. A new more robust virtualized solution is to be deployed.

**Physical Description:**

Deploy an enterprise solution that will expand and replace the existing hardware and software virtual desktop infrastructure. The current Citrix XenApp is an application-only delivery platform and is becoming outgrown. A new more robust virtualized solution is to be deployed.

**Project Justification:**

Deploy an enterprise solution that will expand and replace the existing hardware and software virtual desktop infrastructure. The current Citrix XenApp is an application-only delivery platform and is becoming outgrown. A new more robust virtualized solution is to be deployed.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00770.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00770X - PT16899B SE 2016 VMware View Virtual Desktop Infrastructure

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00770X**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00770X - PT16899B SE 2016 VMware View Virtual Desktop Infrastructure  
 Workpaper Detail: 00770X.001 - Deploy an enterprise solution that will expand and replace the existing hardware and so  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |          |          |              |  |
|--------------------------|----------|----------|--------------|--|
| Years                    | 2014     | 2015     | 2016         |  |
| Labor                    | 0        | 0        | 232          |  |
| Non-Labor                | 0        | 0        | 2,400        |  |
| NSE                      | 0        | 0        | 0            |  |
| <b>Total</b>             | <b>0</b> | <b>0</b> | <b>2,632</b> |  |
| FTE                      | 0.0      | 0.0      | 2.3          |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00772A - PT14837 SCG Field Area Network**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772A - PT14837 SCG Field Area Network

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |               |              |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|---------------|--------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015          | 2016         |
| <b>Years</b>    |            |                   |          |          |          |          |                   |               |              |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 2,144         | 1,429        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 15,730        | 0            |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0             | 0            |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>17,874</b> | <b>1,429</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 21.0          | 14.0         |

**Business Purpose:**

The SCG private communication infrastructures supporting field voice communication for Customer Service Field, Distribution & Transmission and Storage consists of a Land-Mobile-Radio (LMR) network and voice dispatch console system. These systems are end-of-life and end-of-support. The dispatch system is limited to a finite number of console positions which no longer meet the needs of the business. The radio system also requires the use of other legacy network infrastructure that needs to be retired from the environment. These systems are critical to business operations especially during emergencies as the primary voice channel during incident management, priority work orders and emergency response.

The call recording system used by dispatch is also end of life and incompatible with newer dispatch console systems. Communication for fixed assets in the field including RTU's on pipelines, currently served by ATT 3002 circuits are persistently unreliable due to aged infrastructure and lack of investment by ATT. A digital LMR and IP based console system has been evaluated as the solution. Engineers are currently reviewing proposals supplied by potential vendors.

**Physical Description:**

The project will design and deploy a new radio and console IP-based system that will deliver, SCG territory wide dispatched voice including voice recording, enabling the scalability and flexibility required by the business. The system will enable interoperability between the field radios and the company VoIP telephony system and will also enhance Critical Service for Disaster Recovery, Safety Related Activities and "Out of Cell phone Carrier Coverage" Communications. The system will be designed to support data communications for fixed assets in the field on pipelines and storage fields where possible.

**Project Justification:**

With the deployment of portables (hand-held LMR units) workforce safety, emergency notification and responsiveness will be enhanced with Out of Truck communications. The elimination of pagers for the field workforce who use the LMR system. Extended voice indoor coverage for customer service field. Consolidation of multiple radio systems into a single area-wide digital system which will simplify support and maintenance. Extensive expansion of the voice dispatch, with the added flexibility of dispatch from "anywhere" - this specifically will enable the consolidation of regional dispatch into a central location if required.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00772.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00772A - PT14837 SCG Field Area Network

**Forecast Methodology:**

**Labor - Zero-Based**

The internal labor cost assumes that there are 12 FTE's working on the project at any given time, all other labor will be provided by the vendors of choice.

**Non-Labor - Zero-Based**

The base costs were established from the RFP responses recently received from a number of vendors. The cost does not account for the final design of the network which may require additional networking

**NSE - Zero-Based**

N/A



**Beginning of Workpaper Sub Details for  
Workpaper Group 00772A**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772A - PT14837 SCG Field Area Network  
 Workpaper Detail: 00772A.001 - The SCG private communication infrastructures supporting field voice communication for  
 In-Service Date: 12/31/2015  
 Description:

| Forecast In 2013 \$(000) |              |          |              |          |  |
|--------------------------|--------------|----------|--------------|----------|--|
| Years                    |              | 2014     | 2015         | 2016     |  |
| Labor                    |              | 0        | 715          | 0        |  |
| Non-Labor                |              | 0        | 6,380        | 0        |  |
| NSE                      |              | 0        | 0            | 0        |  |
|                          | <b>Total</b> | <b>0</b> | <b>7,095</b> | <b>0</b> |  |
| FTE                      |              | 0.0      | 7.0          | 0.0      |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772A - PT14837 SCG Field Area Network  
 Workpaper Detail: 00772A.002 - The SCG private communication infrastructures supporting field voice communication for  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |               |              |  |
|--------------------------|--------------|----------|---------------|--------------|--|
| Years                    |              | 2014     | 2015          | 2016         |  |
| Labor                    |              | 0        | 1,429         | 1,429        |  |
| Non-Labor                |              | 0        | 9,350         | 0            |  |
| NSE                      |              | 0        | 0             | 0            |  |
|                          | <b>Total</b> | <b>0</b> | <b>10,779</b> | <b>1,429</b> |  |
| FTE                      |              | 0.0      | 14.0          | 14.0         |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00772B - PT14849 SCG CI Small Cap**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772B - PT14849 SCG CI Small Cap

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |            |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016       |
| <b>Years</b>    |            |                   |          |          |          |          |                   |            |            |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0          |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 500               | 500        | 500        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0          |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>500</b>        | <b>500</b> | <b>500</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.0        | 0.0        |

**Business Purpose:**

Multiple SCG Small Cap projects covering business customer operational issues, safety, network improvements, faster service delivery, collaboration, and innovation.

**Physical Description:**

Various Items

**Project Justification:**

Maintain and improve CI service and network reliability, and enhance our ability to recover from a commercial power outage. For Net Backup, it will improve back-up execution time, improve performance, and decrease failed jobs. SCG Telecom test equipment is for new field technology enhancements such as the digital radio network. Spare switches, telecom hardware and components will minimize downtime that would otherwise impact applications and services.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00772.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00772B - PT14849 SCG CI Small Cap

**Forecast Methodology:**

**Labor - Zero-Based**

N/A

**Non-Labor - Zero-Based**

Based on general HW list price estimates

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00772B**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772B - PT14849 SCG CI Small Cap  
 Workpaper Detail: 00772B.001 - Multiple SCG Small Cap projects for covering business customer operational issues, safe  
 In-Service Date: Not Applicable  
 Description:

| Forecast In 2013 \$(000) |            |            |            |  |
|--------------------------|------------|------------|------------|--|
| Years                    | 2014       | 2015       | 2016       |  |
| Labor                    | 0          | 0          | 0          |  |
| Non-Labor                | 500        | 500        | 500        |  |
| NSE                      | 0          | 0          | 0          |  |
| <b>Total</b>             | <b>500</b> | <b>500</b> | <b>500</b> |  |
| FTE                      | 0.0        | 0.0        | 0.0        |  |

*Note: Totals may include rounding differences.*



**Beginning of Workpaper Group**  
**00772D - PT14851 SE Local Area Network Refresh**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772D - PT14851 SE Local Area Network Refresh

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |              |              |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|--------------|--------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015         | 2016         |
| <b>Years</b>    |            |                   |          |          |          |          |                   |              |              |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 378               | 1,350        | 2,026        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 2,100             | 2,100        | 2,138        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0            | 0            |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>2,478</b>      | <b>3,450</b> | <b>4,164</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 3.7               | 13.2         | 19.9         |

**Business Purpose:**

Sempra has adopted a 5 year refresh cycle for LAN switching infrastructure. The existing infrastructure was installed between 2007 and 2009. The current LAN infrastructure is out of warranty and out of support; software updates and patches are no longer available for a large number of the devices. The availability of technical support could also become limited or non-existent.

**Physical Description:**

The project will replace 644 Ethernet LAN Switches with 35000 individual ports at more than 110 Sempra. These switches support the delivery of VoIP telephony and data to all SEU users, Substation Security, Electric and Gas Transmission and Operations.

**Project Justification:**

Reliability and stability of the VoIP telephony and data networks. Vendor support for hardware components and software upgrades.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00772.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00772D - PT14851 SE Local Area Network Refresh

**Forecast Methodology:**

**Labor - Zero-Based**

Estimates are based on preliminary design work. A final design will be completed once the project is approved

**Non-Labor - Zero-Based**

Estimates are based on preliminary design work. A final design will be completed once the project is approved

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00772D**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772D - PT14851 SE Local Area Network Refresh  
 Workpaper Detail: 00772D.001 - Sempra has adopted a 5 year refresh cycle for LAN switching infrastructure. The existin  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |              |              |  |
|--------------------------|--------------|--------------|--------------|--|
| Years                    | 2014         | 2015         | 2016         |  |
| Labor                    | 378          | 1,350        | 2,026        |  |
| Non-Labor                | 2,100        | 2,100        | 2,138        |  |
| NSE                      | 0            | 0            | 0            |  |
| <b>Total</b>             | <b>2,478</b> | <b>3,450</b> | <b>4,164</b> |  |
| FTE                      | 3.7          | 13.2         | 19.9         |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00772G - PT14871 SCG GAS SCADA convert**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772G - PT14871 SCG GAS SCADA convert

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |              |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|--------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016         |
| <b>Years</b>    |            |                   |          |          |          |          |                   |          |              |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 347          |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 1,152        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0            |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>0</b> | <b>1,499</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.0      | 3.4          |

**Business Purpose:**

Gas control currently has over 120 Remote Terminal Units (RTU) out in the field collecting data required for monitoring and controlling the SoCal Gas pipelines. These RTU's are connected via leases wireline circuits and company owned wireless radios. The leased circuits over time have become unreliable due to the aging infrastructure and lack of timely support from the carriers as they are eliminating the product from their portfolio and as such are not making the investments in the infrastructure and field support required to maintain the product. The unreliability of the circuits causes intermittent and extended communication outages for Gas Control. A number of company owned wireless radios (General Electric MDS-9810 Spread Spectrum radios) are at end of life and end of support. In addition, these radios do not support Ethernet protocols and they do not have a strong security. Both of which are becoming a hard and fast requirement for field communication. Repurpose retiring PACER 900 MHz radio system to support expanding Gas SCADA requirements due to PSEP and to replace existing Telco 3002 Voice Grade 4-wire leases which are at end of life and end of support. Current replacement options as proposed by Telcos will equal about \$300/month MRC + equipment and NRC per site. Current number of sites is approximately 125 sites with the possibility of 800 to 1000 new low usage sites as a result of the PSEP project.

**Physical Description:**

The project will design and deploy a low cost wide area wireless network using the SoCal Gas 900MHz licensed spectrum in combination with leased wireline or wireless services where the spectrum does not exist. This wireless network will eliminate 80% of the O&M associated with supporting the RTU's and the leased services will have long term support from the carriers. Replace existing PACER, Johnson 900 MHz base stations with new Motorola, Quantar or similar data capable base station radios and install new 900 MHz remote radios, antenna systems and power as necessary to remote Gas SCADA sites. New radios will be high power and licensed preventing interference from other ISM unlicensed 900 MHz radio systems present on some of the SCADA sites.

**Project Justification:**

Reliable communications for Gas control. Enable simultaneous, Serial RS-232 and Ethernet capability which provides for connectivity for legacy Remote Terminal Unit (RTU) communications and provides a migration path forward to Ethernet backhaul when the requirement is defined. Provide payload encryption using AES-128 encryption for greater payload security at gas transmission metering stations. Cost avoidance of new and existing Telco leases and return of investment in approximately 3.5 Years.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00772.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00772G - PT14871 SCG GAS SCADA convert

**Forecast Methodology:**

**Labor - Zero-Based**

Estimates are based on preliminary design work. A final design will be completed once the project is approved

**Non-Labor - Zero-Based**

Estimates are based on preliminary design work. A final design will be completed once the project is approved

**NSE - Zero-Based**

N/A



**Beginning of Workpaper Sub Details for  
Workpaper Group 00772G**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772G - PT14871 SCG GAS SCADA convert  
 Workpaper Detail: 00772G.001 - Gas control currently has over 120 Remote Terminal Units (RTU) out in the field colle  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |          |              |  |
|--------------------------|--------------|----------|----------|--------------|--|
| Years                    |              | 2014     | 2015     | 2016         |  |
| Labor                    |              | 0        | 0        | 347          |  |
| Non-Labor                |              | 0        | 0        | 1,152        |  |
| NSE                      |              | 0        | 0        | 0            |  |
|                          | <b>Total</b> | <b>0</b> | <b>0</b> | <b>1,499</b> |  |
| FTE                      |              | 0.0      | 0.0      | 3.4          |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00772H - PT15883 SE Converged Computing Infrastructure**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772H - PT15883 SE Converged Computing Infrastructure

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |               |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|---------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015          | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |               |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 72            | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 16,000        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0             | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>16,072</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.8           | 0.0      |

**Business Purpose:**

Client's requests and needs are dynamic and often require computing infrastructure to be delivered quickly. Current "just-in-time" infrastructure purchasing is not nimble enough to meet the needs of clients for small-to-medium sized projects or for organic growth of existing computing environments as data volume increases. Existing computing systems will continue to reach vendor end-of-life and end-of-support dates as well as the Semptra IT asset lifecycle of 5 - 7 years and will need to be replaced or upgrade to provide reliable and available IT systems.

**Physical Description:**

The project will fund computing infrastructure for small-to-medium sized projects, requests for computing environment expansion to meet operational needs, and refresh existing computing systems in the data center and remote computer rooms not currently within the scope of other refresh efforts. The project scope includes physical infrastructure (server hardware, storage, backup capacity, server cabinets) and software (operating systems, authentication services, management agents) required for the operation and management of the infrastructure.

**Project Justification:**

This project will provide on-demand and elastic compute capacity to meet business needs without the delays associated with just-in-time infrastructure purchases. This project will increase the capacity and functionality of the compute self-provisioning portal empowering clients to fulfill their computing requests without involving the Computing Infrastructure department resulting in a reduced delivery time. Aging systems will be replaced or upgraded providing higher reliability and performance for business applications as systems reach end-of-life or end-of-support. As aging systems are replaced or upgraded, annual maintenance costs, data center floor space required, and power consumption will be reduced.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00772.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00772H - PT15883 SE Converged Computing Infrastructure

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00772H**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772H - PT15883 SE Converged Computing Infrastructure  
 Workpaper Detail: 00772H.001 - This project will fund continued expansion of the converged computing infrastructure in  
 In-Service Date: 12/31/2015  
 Description:

| Forecast In 2013 \$(000) |              |          |              |          |  |
|--------------------------|--------------|----------|--------------|----------|--|
| Years                    |              | 2014     | 2015         | 2016     |  |
| Labor                    |              | 0        | 36           | 0        |  |
| Non-Labor                |              | 0        | 8,500        | 0        |  |
| NSE                      |              | 0        | 0            | 0        |  |
|                          | <b>Total</b> | <b>0</b> | <b>8,536</b> | <b>0</b> |  |
| FTE                      |              | 0.0      | 0.4          | 0.0      |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772H - PT15883 SE Converged Computing Infrastructure  
 Workpaper Detail: 00772H.002 - This project will fund continued expansion of the converged computing infrastructure in  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |              |          |  |
|--------------------------|--------------|----------|--------------|----------|--|
| Years                    |              | 2014     | 2015         | 2016     |  |
| Labor                    |              | 0        | 36           | 0        |  |
| Non-Labor                |              | 0        | 7,500        | 0        |  |
| NSE                      |              | 0        | 0            | 0        |  |
|                          | <b>Total</b> | <b>0</b> | <b>7,536</b> | <b>0</b> |  |
| FTE                      |              | 0.0      | 0.4          | 0.0      |  |

*Note: Totals may include rounding differences.*



**Beginning of Workpaper Group**  
**00772I - PT15884 SE Backup Systems**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772I - PT15884 SE Backup Systems

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |            |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016       |
| <b>Years</b>    |            |                   |          |          |          |          |                   |          |            |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 2          |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 700        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0          |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>0</b> | <b>702</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.0      | 0.1        |

**Business Purpose:**

Expand backup storage capacity that supports the NetBackup application. The additional capacity is required to keep pace with the expanding SAN storage environments.

**Physical Description:**

Purchase and install additional backup storage capacity at Rancho Bernardo and Monterey Park datacenters. New hardware to be co-termed with existing appliances December 2015.

**Project Justification:**

Having backup storage capacity to accommodate incremental and small to medium project backup requirements.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00772.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00772I - PT15884 SE Backup Systems

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00772I**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772I - PT15884 SE Backup Systems  
 Workpaper Detail: 00772I.001 - Expand backup storage capacity that supports the NetBackup application. The additional  
 In-Service Date: 06/30/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |          |            |  |
|--------------------------|--------------|----------|----------|------------|--|
| Years                    |              | 2014     | 2015     | 2016       |  |
| Labor                    |              | 0        | 0        | 2          |  |
| Non-Labor                |              | 0        | 0        | 700        |  |
| NSE                      |              | 0        | 0        | 0          |  |
|                          | <b>Total</b> | <b>0</b> | <b>0</b> | <b>702</b> |  |
| FTE                      |              | 0.0      | 0.0      | 0.1        |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00772J - PT15891 SCG Communications Shelter**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772J - PT15891 SCG Communications Shelter

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |            |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 104        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 140        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>244</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 1.0        | 0.0      |

**Business Purpose:**

Increase reliability and scalability of communication systems located at the Blythe facility. Description: The current shelter has no available physical capacity for additional communications systems and separation of redundant communications infrastructure. This project will build new footings to support a second shelter, add electrical feed. Purchase and transport shelter to Blythe. Set it in place where Telecomm staff can ready it for production. Purchase a new UPS, DC plant, cabinets, rack, cable tray, and move the base IDF to the new shelter.

**Physical Description:**

Build new footings to support a second shelter, add electrical feed. Purchase and transport shelter to Blythe. Set it in place where Telecomm staff can ready it for production. Purchase a new UPS, DC plant, cabinets, rack and cable tray. Move base IDF to shelter, it's currently six feet above floor in a very small and hot area.

**Project Justification:**

Prevent loss of communications to Blythe, Needles, and surrounding small desert locations and increase scalability capacity for additional communications systems.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00772.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00772J - PT15891 SCG Communications Shelter

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A



**Beginning of Workpaper Sub Details for  
Workpaper Group 00772J**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772J - PT15891 SCG Communications Shelter  
 Workpaper Detail: 00772J.001 - We've outgrown this shelter. In 2012 a server cabinet was added and the shelter is now  
 In-Service Date: 09/30/2015  
 Description:

| Forecast In 2013 \$(000) |              |          |            |          |  |
|--------------------------|--------------|----------|------------|----------|--|
| Years                    |              | 2014     | 2015       | 2016     |  |
| Labor                    |              | 0        | 104        | 0        |  |
| Non-Labor                |              | 0        | 140        | 0        |  |
| NSE                      |              | 0        | 0          | 0        |  |
|                          | <b>Total</b> | <b>0</b> | <b>244</b> | <b>0</b> |  |
| FTE                      |              | 0.0      | 1.0        | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00772M - PT15911 SCG Communications Shelter**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772M - PT15911 SCG Communications Shelter

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |            |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 8          | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 375        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>383</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.1        | 0.0      |

**Business Purpose:**

New shelter is reinforced concrete, walls, floors and ceiling. It should last 50 years.

**Physical Description:**

Purchase and transport shelter to Monterey Park where it can be readied for deployment. Add new footings. Grade dirt roads from pavement to site. On key weekend transport shelter to site. Hoist old shelter off footings and replace with new. Transfer racks of equipment from old shelter to new and turn up.

**Project Justification:**

Sheltered is old and weathered. The walls are deteriorating and the roof needs to be replaced.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00772.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00772M - PT15911 SCG Communications Shelter

**Forecast Methodology:**

**Labor - Zero-Based**

Based on internal labor hours estimates

**Non-Labor - Zero-Based**

Based on vendor estimates

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00772M**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772M - PT15911 SCG Communications Shelter  
 Workpaper Detail: 00772M.001 - This project will replace a telecommunications shelter that has been determined to be s  
 In-Service Date: 09/30/2016  
 Description:

| Forecast In 2013 \$(000) |          |            |          |  |
|--------------------------|----------|------------|----------|--|
| Years                    | 2014     | 2015       | 2016     |  |
| Labor                    | 0        | 8          | 0        |  |
| Non-Labor                | 0        | 375        | 0        |  |
| NSE                      | 0        | 0          | 0        |  |
| <b>Total</b>             | <b>0</b> | <b>383</b> | <b>0</b> |  |
| FTE                      | 0.0      | 0.1        | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**007720 - PT16891 2016 SCG Communication Shelter**



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 007720 - PT16891 2016 SCG Communication Shelter

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |              | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |            |
|-----------------|--------------|-------------------|----------|----------|----------|----------|-------------------|----------|------------|
|                 |              | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016       |
|                 | <b>Years</b> |                   |          |          |          |          |                   |          |            |
| Labor           | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 21         |
| Non-Labor       | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 800        |
| NSE             | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0          |
|                 | <b>Total</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>0</b> | <b>821</b> |
| FTE             | Zero-Based   | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.0      | 0.2        |

**Business Purpose:**

Shelter is older and made with Cheap materials, it's weather damaged and leaking water. New shelter is reinforced concrete, walls, floors and ceiling. It should last 50 years.

**Physical Description:**

Purchase and transport shelter to Monterey Park where it can readied for deployment. Add new footings. Grade dirt roads from pavement to site. On key weekend transport shelter to site. Hoist old shelter off footings and replace with new. Transfer racks of equipment from old shelter to new and turn up.

**Project Justification:**

Sheltered is old and weathered. The walls are deteriorating and the roof needs to be replaced.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00772.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00772O - PT16891 2016 SCG Communication Shelter

**Forecast Methodology:**

**Labor - Zero-Based**

Based on internal labor hours estimated

**Non-Labor - Zero-Based**

Based on vendor estimates.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 007720**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772O - PT16891 2016 SCG Communication Shelter  
 Workpaper Detail: 00772O.001 - This project will replace two telecommunications shelters that have been determined to  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |          |          |            |  |
|--------------------------|----------|----------|------------|--|
| Years                    | 2014     | 2015     | 2016       |  |
| Labor                    | 0        | 0        | 21         |  |
| Non-Labor                | 0        | 0        | 800        |  |
| NSE                      | 0        | 0        | 0          |  |
| <b>Total</b>             | <b>0</b> | <b>0</b> | <b>821</b> |  |
| FTE                      | 0.0      | 0.0      | 0.2        |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00772P - PT15893A SE Wide Area Network Refresh**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772P - PT15893A SE Wide Area Network Refresh

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |              | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |              |
|-----------------|--------------|-------------------|----------|----------|----------|----------|-------------------|----------|--------------|
|                 |              | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016         |
|                 | <b>Years</b> |                   |          |          |          |          |                   |          |              |
| Labor           | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 464          |
| Non-Labor       | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 4,000        |
| NSE             | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0            |
|                 | <b>Total</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>0</b> | <b>4,464</b> |
| FTE             | Zero-Based   | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.0      | 4.5          |

**Business Purpose:**

The project will deploy the incremental capacity and technology upgrades required to support ongoing projects and increasing business demand for a robust, reliable and efficient WAN network. Retire and upgrade end-of-life WAN hardware (approx 555 routers) and increase the efficiency of managing the network through software enhancements and technologies to remotely manage devices.

**Physical Description:**

This project will target end of life hardware and less reliable WAN connections.

**Project Justification:**

The project will deploy the incremental capacity and technology upgrades required to support ongoing projects and increasing business demand for a robust, reliable and efficient WAN network. Retire and upgrade end-of-life WAN hardware (approx 555 routers) and increase the efficiency of managing the network through software enhancements and technologies to remotely manage devices.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00772.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00772P - PT15893A SE Wide Area Network Refresh

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00772P**



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772P - PT15893A SE Wide Area Network Refresh  
 Workpaper Detail: 00772P.001 - The project will deploy the incremental capacity and technology upgrades required to su  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |          |              |  |
|--------------------------|--------------|----------|----------|--------------|--|
| Years                    |              | 2014     | 2015     | 2016         |  |
| Labor                    |              | 0        | 0        | 464          |  |
| Non-Labor                |              | 0        | 0        | 4,000        |  |
| NSE                      |              | 0        | 0        | 0            |  |
|                          | <b>Total</b> | <b>0</b> | <b>0</b> | <b>4,464</b> |  |
| FTE                      |              | 0.0      | 0.0      | 4.5          |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00772Q - PT16893B SCG Communication Shelter (Box Springs)**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772Q - PT16893B SCG Communication Shelter (Box Springs)

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |            |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 56                | 53         | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 89                | 140        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>145</b>        | <b>193</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.5               | 0.5        | 0.0      |

**Business Purpose:**

Shelter is old and weathered. The south wall is cracked and water is leaking into the shelter. Flashing is falling off and the roof needs to be replaced.

**Physical Description:**

Purchase and transport shelter to Monterey Park where it can be readied for deployment. Add new footings. Grade dirt roads from pavement to site. On key weekend transport shelter to site. Hoist old shelter off footings and replace with new. Transfer racks of equipment from old shelter to new and turn up.

**Project Justification:**

Employee safety, electrical hazard when interior gets wet. Prevent loss of communications.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00772.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00772Q - PT16893B SCG Communication Shelter (Box Springs)

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00772Q**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772Q - PT16893B SCG Communication Shelter (Box Springs)  
 Workpaper Detail: 00772Q.001 - Box Springs  
 In-Service Date: 09/30/2015  
 Description:

| Forecast In 2013 \$(000) |            |            |          |  |
|--------------------------|------------|------------|----------|--|
| Years                    | 2014       | 2015       | 2016     |  |
| Labor                    | 56         | 53         | 0        |  |
| Non-Labor                | 89         | 140        | 0        |  |
| NSE                      | 0          | 0          | 0        |  |
| <b>Total</b>             | <b>145</b> | <b>193</b> | <b>0</b> |  |
| FTE                      | 0.5        | 0.5        | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00772R - PT16894A SCG Private Network Expansion**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772R - PT16894A SCG Private Network Expansion

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |              |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|--------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016         |
| <b>Years</b>    |            |                   |          |          |          |          |                   |          |              |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 348          |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 1,800        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0            |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>0</b> | <b>2,148</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.0      | 3.4          |

**Business Purpose:**

This project will be to extend the Gas Co microwave network to areas currently not covered and to replace end of life technology with new Ethernet/Huybrid radios. These projects will help to minimize lease costs to SCG bases and operational centers and will enable backhaul for Pipeline Security and expanding pipe operations. Expanded network protection for existing pipeline telemetry and corporate data and voice needs.

**Physical Description:**

This project will be to extend the Gas Co microwave network to areas currently not covered and to replace end of life technology with new Ethernet/Huybrid radios. These projects will help to minimize lease costs to SCG bases and operational centers and will enable backhaul for Pipeline Security and expanding pipe operations. Expanded network protection for existing pipeline telemetry and corporate data and voice needs.

**Project Justification:**

This project will be to extend the Gas Co microwave network to areas currently not covered and to replace end of life technology with new Ethernet/Huybrid radios. These projects will help to minimize lease costs to SCG bases and operational centers and will enable backhaul for Pipeline Security and expanding pipe operations. Expanded network protection for existing pipeline telemetry and corporate data and voice needs.

*Note: Totals may include rounding differences.*



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00772.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00772R - PT16894A SCG Private Network Expansion

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00772R**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772R - PT16894A SCG Private Network Expansion  
 Workpaper Detail: 00772R.001 - This project will be to extend the Gas Co microwave network to areas currently not cove  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |          |              |  |
|--------------------------|--------------|----------|----------|--------------|--|
| Years                    |              | 2014     | 2015     | 2016         |  |
| Labor                    |              | 0        | 0        | 348          |  |
| Non-Labor                |              | 0        | 0        | 1,800        |  |
| NSE                      |              | 0        | 0        | 0            |  |
|                          | <b>Total</b> | <b>0</b> | <b>0</b> | <b>2,148</b> |  |
| FTE                      |              | 0.0      | 0.0      | 3.4          |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00772S - PT16894B SCG Communication Shelters (Double Mountain)**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772S - PT16894B SCG Communication Shelters (Double Mountain)

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |            |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 56                | 53         | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 89                | 179        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>145</b>        | <b>232</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.5               | 0.5        | 0.0      |

**Business Purpose:**

Shelter is old and weathered. The walls are deteriorating and the roof needs to be replaced. One wall may be bowed out. The ice bridge is damaged.

**Physical Description:**

Purchase and transport shelter to Monterey Park where it can be readied for deployment. Add new footings. Grade dirt roads from pavement to site. On key weekend transport shelter to site. Hoist old shelter off footings and replace with new. Transfer racks of equipment from old shelter to new and turn up.

**Project Justification:**

Employee safety, electrical hazard if interior gets wet. Prevent loss of communications.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00772.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00772S - PT16894B SCG Communication Shelters (Double Mountain)

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00772S**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772S - PT16894B SCG Communication Shelters (Double Mountain)  
 Workpaper Detail: 00772S.001 - Double Mountain  
 In-Service Date: 09/30/2015  
 Description:

| Forecast In 2013 \$(000) |            |            |          |  |
|--------------------------|------------|------------|----------|--|
| Years                    | 2014       | 2015       | 2016     |  |
| Labor                    | 56         | 53         | 0        |  |
| Non-Labor                | 89         | 179        | 0        |  |
| NSE                      | 0          | 0          | 0        |  |
| <b>Total</b>             | <b>145</b> | <b>232</b> | <b>0</b> |  |
| FTE                      | 0.5        | 0.5        | 0.0      |  |

*Note: Totals may include rounding differences.*



**Beginning of Workpaper Group**  
**00772T - PT16895A SE Remote Access Services (VPN) Refresh**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772T - PT16895A SE Remote Access Services (VPN) Refresh

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |      |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016 |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 297        |      |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 500        |      |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          |      |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>797</b> |      |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 2.9        |      |

**Business Purpose:**

Deploy upgraded secure remote user Virtual Private Network (VPN) infrastructure following the established five year lifecycle for Computing Infrastructure assets. Infrastructure provides secure and reliable remote access for all Sempra business groups to support efficiencies of remote workers and business continuity.

**Physical Description:**

The project will deploy upgraded highly available hardware appliances at the primary and secondary data center locations as well upgraded client software for company-managed computing assets.

**Project Justification:**

Computing Infrastructure assets are designed for five (5) years of service providing a balance between long-term support and availability of new features and functionality as technology improves. The current VPN infrastructure was deployed in 2010 and is reaching its five year threshold. Upgraded infrastructure also ensures access to software updates against evolving cyber threats, stability, and feature enhancements.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00772.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00772T - PT16895A SE Remote Access Services (VPN) Refresh

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00772T**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772T - PT16895A SE Remote Access Services (VPN) Refresh  
 Workpaper Detail: 00772T.001 - This project will upgrade the corporate remote access Virtual Private Network (VPN) sol  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |          |            |  |
|--------------------------|--------------|----------|----------|------------|--|
| Years                    |              | 2014     | 2015     | 2016       |  |
| Labor                    |              | 0        | 0        | 297        |  |
| Non-Labor                |              | 0        | 0        | 500        |  |
| NSE                      |              | 0        | 0        | 0          |  |
|                          | <b>Total</b> | <b>0</b> | <b>0</b> | <b>797</b> |  |
| FTE                      |              | 0.0      | 0.0      | 2.9        |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00772U - PT81389 SCG BATTERY REPLACEMENT REENGINEER**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772U - PT81389 SCG BATTERY REPLACEMENT REENGINEER

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |          |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 86                | 0        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 63                | 0        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>149</b>        | <b>0</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.8               | 0.0      | 0.0      |

**Business Purpose:**

Due to the existing batteries being end of life, this SCG project will first measure loads and then solicit bids via RFQ to update and replace the battery plants at: Chuckwalla Peak, Double Mtn., Mount David, Newberry Springs Station, Oat Mountain, Oildale Base, Palm Desert, Red Mountain, Ventura Comp. Sta., Whitewater Rptr., La Habra M/W, Needles Base, Santa Maria, Cactus City Rptr., La Cumbre, Victorville. Increase capacity where needed to provide support for new services such as SGCS. Network enable battery plants to provide Client Field Services remote monitoring capabilities. Work to identify single source manufacture for management simplification and system cohesion.

**Physical Description:**

AC line power is supplied to the site by SCG. The AC power feeds a Sageon -48v dc power system, which consists of a controller, rectifier, and a battery plant. A propane generator with an automatic transfer switch is installed to backup the SCG AC power. In the event of loss of 120 VAC the automatic transfer switch will go to the Generator. The equipment on the DC Battery Plant will not take a hit due to the transfer. If the transfer switch and or Generator does not work the equipment will run on the DC plant for however long the Site Load has been engineered.

**Project Justification:**

Due to the existing batteries being end of life, this SCG project will first measure loads and then solicit bids via RFQ to update and replace the battery plants at: Chuckwalla Peak, Double Mtn., Mount David, Newberry Springs Station, Oat Mountain, Oildale Base, Palm Desert, Red Mountain, Ventura Comp. Sta., Whitewater Rptr., La Habra M/W, Needles Base, Santa Maria, Cactus City Rptr., La Cumbre, Victorville. Increase capacity where needed to provide support for new services such as SGCS. Network enable battery plants to provide Client Field Services remote monitoring capabilities. Work to identify single source manufacture for management simplification and system cohesion.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00772.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00772U - PT81389 SCG BATTERY REPLACEMENT REENGINEER

**Forecast Methodology:**

**Labor - Zero-Based**

The forecast is based upon the current project timeline.

**Non-Labor - Zero-Based**

The forecast is based upon the current project timeline.

**NSE - Zero-Based**

N/A



**Beginning of Workpaper Sub Details for  
Workpaper Group 00772U**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772U - PT81389 SCG BATTERY REPLACEMENT REENGINEER  
 Workpaper Detail: 00772U.001 - SCG BATTERY REPLACEMENT REENGINEER PROJE  
 In-Service Date: 03/31/2014  
 Description:

| Forecast In 2013 \$(000) |            |          |          |  |
|--------------------------|------------|----------|----------|--|
| Years                    | 2014       | 2015     | 2016     |  |
| Labor                    | 86         | 0        | 0        |  |
| Non-Labor                | 63         | 0        | 0        |  |
| NSE                      | 0          | 0        | 0        |  |
| <b>Total</b>             | <b>149</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 0.8        | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00772V - PT81414 CORE NETWORK DESIGN**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772V - PT81414 CORE NETWORK DESIGN

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |              | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |          |
|-----------------|--------------|-------------------|----------|----------|----------|----------|-------------------|----------|----------|
|                 |              | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016     |
|                 | <b>Years</b> |                   |          |          |          |          |                   |          |          |
| Labor           | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 201               | 0        | 0        |
| Non-Labor       | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 335               | 0        | 0        |
| NSE             | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0        |
|                 | <b>Total</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>536</b>        | <b>0</b> | <b>0</b> |
| FTE             | Zero-Based   | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 2.0               | 0.0      | 0.0      |

**Business Purpose:**

This project comprises of a re-design of the connectivity between key Sempra facilities. The re-design will provide additional availability and redundancy over and above what exists today. The services to be procured are network circuits that will effectively replace existing circuits for a lower monthly recurring cost, higher bandwidth and additional redundancy.

The facilities are:

SCG - The Gas Tower, Monterey Park Dater Center, San Dimas & Redlands Customer Contact Center.

SDGE - Lightwave Facility, Rancho Bernardo Data Center, Century Park.

**Physical Description:**

AIS 1G circuits to Monterey Park and Rancho Bernardo data centers

AIS 10G circuit between Monterey Park and Century Park

Two (2) AIS 1G Internet connections at both MPK and RB data centers(also supporting voice services).

Redundant fiber paths to Ranch Bernardo from SDGE core network

**Project Justification:**

Increased communication bandwidth at the locations listed above.

Enhanced circuit redundancy

Customer Contact Centers, The Gas Tower and internet services would have connections to both Monterey Park and Ranch Bernardo

The RB data Center would have a new diverse connections to the SDGE core network

Overall reduction in monthly recurring cost for circuits providing similar services today

This project is a prerequisite for colocation service opportunities like Amazon Web Services and Data Center Colocation

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00772.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00772V - PT81414 CORE NETWORK DESIGN

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00772V**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772V - PT81414 CORE NETWORK DESIGN  
 Workpaper Detail: 00772V.001 - CORE NETWORK DESIGN  
 In-Service Date: 03/31/2014  
 Description:

| Forecast In 2013 \$(000) |              |            |          |          |  |
|--------------------------|--------------|------------|----------|----------|--|
| Years                    |              | 2014       | 2015     | 2016     |  |
| Labor                    |              | 201        | 0        | 0        |  |
| Non-Labor                |              | 335        | 0        | 0        |  |
| NSE                      |              | 0          | 0        | 0        |  |
|                          | <b>Total</b> | <b>536</b> | <b>0</b> | <b>0</b> |  |
| FTE                      |              | 2.0        | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00772W - PT81432 PRIVATE NETWORK EXPANSION AND REFRSH**



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772W - PT81432 PRIVATE NETWORK EXPANSION AND REFRSH

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |              |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|--------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015         | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |              |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 447               | 261          | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 2,350             | 1,400        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0            | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>2,797</b>      | <b>1,661</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 4.4               | 2.6          | 0.0      |

**Business Purpose:**

- 1 - Upgrade existing Gas Co. microwave backbone sites that are at capacity that are End of Life and End of Support (EOL/EOS).
- 2 - Expand and extend microwave paths to Gas Co. operating bases for O&M reduction in current leased circuit costs.
- 3 - Replace radio equipment that does not support MPLS Jumbo Frame requirements.

Upgrade Critical Backbone sites that are EOL/EOS  
 Upgrade additional sites and add new sites to Gas Co. Bases to eliminate O&M  
 Upgrade more backbone and some back country sites to replace EOL/EOS radios

**Physical Description:**

Increase capacity on the Gas Co. transport network to support technology advancements within the utility  
 As an example GIS and other projects have added to our transport network bandwidth demands  
 Improved availability of transport network  
 Faster provisioning of new services across the microwave transport network  
 Days vs. Weeks or longer when using Gas Co. personnel vs. Telco services  
 Improved reliability of transport network  
 Replace EOL/EOS equipment  
 Migrate from carrier to private infrastructure.

**Project Justification:**

Reduce O&M related lease costs to Gas Co. operating bases with the addition of new Ethernet microwave radios  
 Enable additional bandwidth to existing Gas Co. microwave paths  
 Replace EOL/EOS microwave radio equipment  
 Convert microwave backbone to native Ethernet  
 Enable additional bandwidth for upcoming projects such as Gas Co. Field Area Network and Pipeline Safety Enhancement Program.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00772.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00772W - PT81432 PRIVATE NETWORK EXPANSION AND REFRSH

**Forecast Methodology:**

**Labor - Zero-Based**

The forecast is based upon the current project timeline.

**Non-Labor - Zero-Based**

The forecast is based upon the current project timeline.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00772W**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772W - PT81432 PRIVATE NETWORK EXPANSION AND REFRSH  
 Workpaper Detail: 00772W.001 - PRIVATE NETWORK EXPANSION AND REFRSH  
 In-Service Date: 12/31/2014  
 Description:

| Forecast In 2013 \$(000) |              |          |          |  |
|--------------------------|--------------|----------|----------|--|
| Years                    | 2014         | 2015     | 2016     |  |
| Labor                    | 447          | 0        | 0        |  |
| Non-Labor                | 2,350        | 0        | 0        |  |
| NSE                      | 0            | 0        | 0        |  |
| <b>Total</b>             | <b>2,797</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 4.4          | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772W - PT81432 PRIVATE NETWORK EXPANSION AND REFRSH  
 Workpaper Detail: 00772W.002 - 2015  
 In-Service Date: 12/31/2015  
 Description:

| Forecast In 2013 \$(000) |              |          |              |          |  |
|--------------------------|--------------|----------|--------------|----------|--|
| Years                    |              | 2014     | 2015         | 2016     |  |
| Labor                    |              | 0        | 261          | 0        |  |
| Non-Labor                |              | 0        | 1,400        | 0        |  |
| NSE                      |              | 0        | 0            | 0        |  |
|                          | <b>Total</b> | <b>0</b> | <b>1,661</b> | <b>0</b> |  |
| FTE                      |              | 0.0      | 2.6          | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00772X - Data Center Network Rebuild**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772X - Data Center Network Rebuild

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |          |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 245               | 0        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 4,416             | 0        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>4,661</b>      | <b>0</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 2.4               | 0.0      | 0.0      |

**Business Purpose:**

Replace a selected subset of aging, end-of-support/end-of-life data center network access infrastructure to increase reliability, performance, and scalability for critical data center services.

**Physical Description:**

Network access switching infrastructure will be replaced at each data center with data center fabric enabled infrastructure that utilizes the converged data center fabric core. Infrastructure identified for replacement includes access switching supporting critical voice systems, SAP systems, and customer facing applications.

**Project Justification:**

Identified infrastructure has reached vendor end-of-support and/or end-of-life resulting in no access to software updates for security vulnerabilities or feature enhancements, technical support, or replacement hardware should a failure occur. Due to the age of the infrastructure, reliability is not predictable increasing the potential for unplanned outages to critical SAP applications used by the business and applications used by our customers.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00772.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00772X - Data Center Network Rebuild

**Forecast Methodology:**

**Labor - Zero-Based**

Based on assumptions based on historical spend.

**Non-Labor - Zero-Based**

Based on assumptions based on historical spend.

**NSE - Zero-Based**

N/A



**Beginning of Workpaper Sub Details for  
Workpaper Group 00772X**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00772X - Data Center Network Rebuild  
 Workpaper Detail: 00772X.001 - Data Center Network Rebuild  
 In-Service Date: 12/31/2014  
 Description:

| Forecast In 2013 \$(000) |              |          |          |  |
|--------------------------|--------------|----------|----------|--|
| Years                    | 2014         | 2015     | 2016     |  |
| Labor                    | 245          | 0        | 0        |  |
| Non-Labor                | 4,416        | 0        | 0        |  |
| NSE                      | 0            | 0        | 0        |  |
| <b>Total</b>             | <b>4,661</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 2.4          | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00774F - PT 15828 In House EDI X12 Services**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00774F - PT 15828 In House EDI X12 Services

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |            |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016       |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 147        | 63         |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 309        | 45         |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0          |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>456</b> | <b>108</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 1.4        | 0.6        |

**Business Purpose:**

The EDI X12 translation and transmission services was outsourced to GXS in March 2009. EDIX depends on GXS to establish new Trading Partner setup, profile change, and timely resolution of translation and connectivity issues. There are multiple instances that GXS failed to meet SLA expectations. To avoid the risk of impacting critical business operations, it is proposed to bring EDI X12 support in house to increase operational efficiency and speed to meet business needs.

**Physical Description:**

The EDI X12 translation and transmission services was outsourced to GXS in March 2009. EDIX depends on GXS to establish new Trading Partner setup, profile change, and timely resolution of translation and connectivity issues. There are multiple instances that GXS failed to meet SLA expectations. To avoid the risk of impacting critical business operations, it is proposed to bring EDI X12 support in house to increase operational efficiency and speed to meet business needs.

**Project Justification:**

The EDI X12 translation and transmission services was outsourced to GXS in March 2009. EDIX depends on GXS to establish new Trading Partner setup, profile change, and timely resolution of translation and connectivity issues. There are multiple instances that GXS failed to meet SLA expectations. To avoid the risk of impacting critical business operations, it is proposed to bring EDI X12 support in house to increase operational efficiency and speed to meet business needs.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00774.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00774F - PT 15828 In House EDI X12 Services

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00774F**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00774.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00774F - PT 15828 In House EDI X12 Services  
 Workpaper Detail: 00774F.001 - The EDI X12 translation and transmission services was outsourced to GXS in March 2009.  
 In-Service Date: 05/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |            |            |  |
|--------------------------|--------------|----------|------------|------------|--|
| Years                    |              | 2014     | 2015       | 2016       |  |
| Labor                    |              | 0        | 147        | 63         |  |
| Non-Labor                |              | 0        | 309        | 45         |  |
| NSE                      |              | 0        | 0          | 0          |  |
|                          | <b>Total</b> | <b>0</b> | <b>456</b> | <b>108</b> |  |
| FTE                      |              | 0.0      | 1.4        | 0.6        |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00776B - PT14817 - Business Planning Simulation (BPS) Replacement Project**



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00776B - PT14817 - Business Planning Simulation (BPS) Replacement Project

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |            |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 244               | 406        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 1,616             | 453        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1,860</b>      | <b>859</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 2.4               | 4.0        | 0.0      |

**Business Purpose:**

Provide budget planners with more intuitive and common front ends (web, MS Office, etc) that will require less training and have a higher adoption rate. Capabilities should include: O&M and capital budgeting, earnings plan development, forecasting of financial results. The new planning & budgeting system will provide administrative tools for central planning to easily manage access, permit status monitoring, and implement global adjustments. The new planning & budgeting system will enable process improvements, such as implementing an 18 to 24 month rolling budget.

**Physical Description:**

Replace BPS with a system that provides capabilities and flexibility that can be easily driven by the business with minimal reliance on IT.

**Project Justification:**

Desired outcomes include speeding up the planning cycle, improving accuracy of forecasts and quality of analysis, analyze earnings plan variances more quickly, reduce time and effort spent preparing budgets.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00776.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00776B - PT14817 - Business Planning Simulation (BPS) Replacement Project

**Forecast Methodology:**

**Labor - Zero-Based**

Based on internal labor hours estimates.

**Non-Labor - Zero-Based**

Based on vendor estimates

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00776B**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00776B - PT14817 - Business Planning Simulation (BPS) Replacement Project  
 Workpaper Detail: 00776B.001 - BPS Planning Simulation Replacement  
 In-Service Date: 12/31/2015  
 Description:

| Forecast In 2013 \$(000) |            |            |          |  |
|--------------------------|------------|------------|----------|--|
| Years                    | 2014       | 2015       | 2016     |  |
| Labor                    | 244        | 406        | 0        |  |
| Non-Labor                | 191        | 453        | 0        |  |
| NSE                      | 0          | 0          | 0        |  |
| <b>Total</b>             | <b>435</b> | <b>859</b> | <b>0</b> |  |
| FTE                      | 2.4        | 4.0        | 0.0      |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00776B - PT14817 - Business Planning Simulation (BPS) Replacement Project  
 Workpaper Detail: 00776B.002 - BPS  
 In-Service Date: 12/31/2014  
 Description:

| Forecast In 2013 \$(000) |            |          |          |  |
|--------------------------|------------|----------|----------|--|
| Years                    | 2014       | 2015     | 2016     |  |
| Labor                    | 0          | 0        | 0        |  |
| Non-Labor                | 600        | 0        | 0        |  |
| NSE                      | 0          | 0        | 0        |  |
| <b>Total</b>             | <b>600</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 0.0        | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00776B - PT14817 - Business Planning Simulation (BPS) Replacement Project  
 Workpaper Detail: 00776B.003 - BPS  
 In-Service Date: 12/31/2014  
 Description:

| Forecast In 2013 \$(000) |            |          |          |  |
|--------------------------|------------|----------|----------|--|
| Years                    | 2014       | 2015     | 2016     |  |
| Labor                    | 0          | 0        | 0        |  |
| Non-Labor                | 825        | 0        | 0        |  |
| NSE                      | 0          | 0        | 0        |  |
| <b>Total</b>             | <b>825</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 0.0        | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00776J - PT15856 SAP Business Warehouse 7.3 Upgrade**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00776J - PT15856 SAP Business Warehouse 7.3 Upgrade

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |              | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |          |
|-----------------|--------------|-------------------|----------|----------|----------|----------|-------------------|------------|----------|
|                 |              | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016     |
|                 | <b>Years</b> |                   |          |          |          |          |                   |            |          |
| Labor           | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 288        | 0        |
| Non-Labor       | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 209        | 0        |
| NSE             | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0        |
|                 | <b>Total</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>497</b> | <b>0</b> |
| FTE             | Zero-Based   | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 2.8        | 0.0      |

**Business Purpose:**

SAP BW version 7.3 can be integrated with the SAP Business Objects v4.0 Platform and SAP HANA. Upgrading to SAP BW v7.3 will enable clients to leverage newer and more robust reporting and analytical capabilities.

**Physical Description:**

The scope of this project will include upgrading the SAP BW environment from version 7.0 to version 7.3. In addition, the Oracle database that supports SAP BW will be upgraded to match the Oracle version that the SAP ERP is on (version 11.2.03 or higher).

**Project Justification:**

As the SAP footprint has grown at Sempra, so have the demands on the SAP Business Warehouse (SAP BW) environment. Clients from SCG, SDGE and the Corporate Center rely on SAP BW everyday for their reporting and analytical needs. The current SAP BW version 7.0 environment is 5+ years old and is experiencing system performance issues, resulting in longer data load & processing times and less timely information for the business. In addition, the database platform that supports SAP BW is Oracle version 10.2.04 while the SAP ERP system is on Oracle version 11.2.03. Being on different Oracle versions creates significant security and supportability risks.

*Note: Totals may include rounding differences.*



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00776.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00776J - PT15856 SAP Business Warehouse 7.3 Upgrade

**Forecast Methodology:**

**Labor - Zero-Based**

Based on internal labor hours estimated

**Non-Labor - Zero-Based**

Based on historical vendor estimates

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00776J**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00776J - PT15856 SAP Business Warehouse 7.3 Upgrade  
 Workpaper Detail: 00776J.001 - As the SAP footprint has grown at Sempra, so have the demands on the SAP Business Wareh  
 In-Service Date: 12/31/2015  
 Description:

| Forecast In 2013 \$(000) |              |          |            |          |  |
|--------------------------|--------------|----------|------------|----------|--|
| Years                    |              | 2014     | 2015       | 2016     |  |
| Labor                    |              | 0        | 288        | 0        |  |
| Non-Labor                |              | 0        | 209        | 0        |  |
| NSE                      |              | 0        | 0          | 0        |  |
|                          | <b>Total</b> | <b>0</b> | <b>497</b> | <b>0</b> |  |
| FTE                      |              | 0.0      | 2.8        | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00777B - PT14918 BancTec Payment Station Server Refresh**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00777.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00777B - PT14918 BancTec Payment Station Server Refresh

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |            |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 132        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>132</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.0        | 0.0      |

**Business Purpose:**

The purpose of this project is to allow for additional electronic transfer of customer checks to banking institutions.

**Physical Description:**

Upgrade of operating systems and add additional features for electronic transfers

**Project Justification:**

The BancTec payment processing system is used to process all mailed payments for both SoCalGas and SDG&E. The current platform is based on Microsoft Windows XP and Windows Server 2003. Microsoft has announced that these products will no longer be supported. It is mandatory that we upgrade to most current versions of PCR/PCA/Oracle/Windows Server/Windows Client

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00777.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00777B - PT14918 BancTec Payment Station Server Refresh

**Forecast Methodology:**

**Labor - Zero-Based**

N/A

**Non-Labor - Zero-Based**

Based on vendor HW estimate

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00777B**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00777.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00777B - PT14918 BancTec Payment Station Server Refresh  
 Workpaper Detail: 00777B.001 - (Banctec)  
 In-Service Date: 06/30/2015  
 Description:

| Forecast In 2013 \$(000) |          |            |          |  |
|--------------------------|----------|------------|----------|--|
| Years                    | 2014     | 2015       | 2016     |  |
| Labor                    | 0        | 0          | 0        |  |
| Non-Labor                | 0        | 132        | 0        |  |
| NSE                      | 0        | 0          | 0        |  |
| <b>Total</b>             | <b>0</b> | <b>132</b> | <b>0</b> |  |
| FTE                      | 0.0      | 0.0        | 0.0      |  |

*Note: Totals may include rounding differences.*



**Beginning of Workpaper Group**  
**00780A - PT14861 Identity & Access Management**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00780.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00780A - PT14861 Identity & Access Management

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |              |              |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|--------------|--------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015         | 2016         |
| Years           |            |                   |          |          |          |          |                   |              |              |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 760               | 577          | 267          |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 1,918             | 450          | 800          |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0            | 0            |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>2,678</b>      | <b>1,027</b> | <b>1,067</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 7.5               | 5.7          | 2.6          |

**Business Purpose:**

The Project will consist of the identification, development, and deployment of Role Based Access Management. The Project will establish singular access controls and expand system functionality in the following areas: Automated provisioning and de-provisioning of access based on employment status; identity access tracking and reporting; access attestation for system, group, and employment type; and increased system integrations to comply with centralized access controls.

By implementing Role Based Access Management, SoCalGas will maintain a singular system of record for assignment, management, and tracking of access within our infrastructure. With this, there will be increased enforcement of the Access Management Standard through least privilege access, separation of duties, and access reporting.

4) Increased system integration to improve compliance with centralized access controls

**Physical Description:**

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00780.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00780A - PT14861 Identity & Access Management

Integrated administration console provides a common interface for all user provisioning and de-provisioning activities allowing for granular access and policy management. Centralized security console reduces the chance of unauthorized access going unnoticed. Regulatory compliance, such as NERC, FERC, HIPPA and SOX, require Sempra to establish a secure access control infrastructure.

- Implement centralized and singular access controls to comply with 12.211.2 – Electronic Access & Identity Management
- Integrate Access Manager with applications and server environments
- Role development for elevated system access as described in SOX control, B.3.11, B.3.6 and E.2.6 (Firecall access)
- Enforcement of least privilege access and separation of duties
- Implement automated enforcement control to track and monitor client access as stated in SOX control, F.3.2
- Enhance report generation for audit, addressing SOX control, B.3.7, IR077, IR086, IR214 and IR218
- Implement technical enforcement logic to address SOX control, IR161. Role based access management will provide appropriate access when identities are; provisioned, transferred intra-company, affiliated company transfers, and de-provisioned.
- Role development that establishes restricted parameters for an identity with powerful (administrative) access as quantified in SOX control, IR213
- Increased functionality and automation to adhere to the published Access Management Standard
- Seamless and timely reporting of an identity's access:
  - Across directories, databases, applications, file shares, etc.
  - Mission critical systems
  - Access rights

**Project Justification:**

Centralized Access Controls: By implementing Role Based Access Management, we will maintain a singular system of record for assignment, management, and tracking of access within our infrastructure. With this, there will be increased enforcement of the Access Management Standard through least privilege access, separation of duties, and access reporting.

Improved Enterprise Security Posture: Integrated administration interface provides a common portal for all user provisioning and de-provisioning activities allowing for granular access and policy management.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00780.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00780A - PT14861 Identity & Access Management

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00780A**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00780.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00780A - PT14861 Identity & Access Management  
 Workpaper Detail: 00780A.001 - IAM Phase 3  
 In-Service Date: 12/31/2016  
 Description:

| <b>Forecast In 2013 \$(000)</b> |              |              |             |  |
|---------------------------------|--------------|--------------|-------------|--|
| <b>Years</b>                    | <b>2014</b>  | <b>2015</b>  | <b>2016</b> |  |
| Labor                           | 577          | 577          | 0           |  |
| Non-Labor                       | 1,643        | 450          | 0           |  |
| NSE                             | 0            | 0            | 0           |  |
| <b>Total</b>                    | <b>2,220</b> | <b>1,027</b> | <b>0</b>    |  |
| FTE                             | 5.7          | 5.7          | 0.0         |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00780.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00780A - PT14861 Identity & Access Management  
 Workpaper Detail: 00780A.002 - Phase 4  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |          |          |              |  |
|--------------------------|----------|----------|--------------|--|
| Years                    | 2014     | 2015     | 2016         |  |
| Labor                    | 0        | 0        | 267          |  |
| Non-Labor                | 0        | 0        | 800          |  |
| NSE                      | 0        | 0        | 0            |  |
| <b>Total</b>             | <b>0</b> | <b>0</b> | <b>1,067</b> |  |
| FTE                      | 0.0      | 0.0      | 2.6          |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00780.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00780A - PT14861 Identity & Access Management  
 Workpaper Detail: 00780A.003 - IDENTITY & ACCESS MANAGEMENT P2  
 In-Service Date: 04/30/2014  
 Description:

| Forecast In 2013 \$(000) |            |          |          |  |
|--------------------------|------------|----------|----------|--|
| Years                    | 2014       | 2015     | 2016     |  |
| Labor                    | 183        | 0        | 0        |  |
| Non-Labor                | 275        | 0        | 0        |  |
| NSE                      | 0          | 0        | 0        |  |
| <b>Total</b>             | <b>458</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 1.8        | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*



**Beginning of Workpaper Group**  
**00780C - PT81451 Mandiant Expansion**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00780.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00780C - PT81451 Mandiant Expansion

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |          |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 7                 | 0        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 446               | 0        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>453</b>        | <b>0</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.1               | 0.0      | 0.0      |

**Business Purpose:**

We have no automated process to take detection of malware via network traffic and scan the desktop and server environment for signs of compromise. Detection of compromise requires significant time and effort to determine what impact there was to Sempra enterprise. Current identification process requires manual individual collection of malware samples and information to attempt to analyze. Blocking services have become time-consuming and ineffective to manage and maintain.

**Physical Description:**

Expand Mandiant licensing and infrastructure to automate controls to stop malware detected by FireEye and other sources from infecting client systems (servers and desktop services). All network links and devices, including fiber, microwave, carrier, LAN and WAN, Monitoring and reporting of malware detections and analysis and prevention of web-based malware threats.

**Project Justification:**

We have no automated process to take detection of malware via network traffic and scan the desktop and server environment for signs of compromise. Detection of compromise requires significant time and effort to determine what impact there was to Sempra enterprise. Current identification process requires manual individual collection of malware samples and information to attempt to analyze. Blocking services have become time-consuming and ineffective to manage and maintain.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00780.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00780C - PT81451 Mandiant Expansion

**Forecast Methodology:**

**Labor - Zero-Based**

Project was completed January 2014.

**Non-Labor - Zero-Based**

Project was completed January 2014.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00780C**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00780.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00780C - PT81451 Mandiant Expansion  
 Workpaper Detail: 00780C.001 - PT81451 Mandiant Expansion  
 In-Service Date: 02/28/2014  
 Description:

| Forecast In 2013 \$(000) |            |          |          |  |
|--------------------------|------------|----------|----------|--|
| Years                    | 2014       | 2015     | 2016     |  |
| Labor                    | 7          | 0        | 0        |  |
| Non-Labor                | 446        | 0        | 0        |  |
| NSE                      | 0          | 0        | 0        |  |
| <b>Total</b>             | <b>453</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 0.1        | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00782A - PT15898 SE Application Platform Technology Refresh**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00782.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00782A - PT15898 SE Application Platform Technology Refresh

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |            |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016       |
| <b>Years</b>    |            |                   |          |          |          |          |                   |            |            |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 334        | 334        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 275        | 650        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0          |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>609</b> | <b>984</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 3.3        | 3.3        |

**Business Purpose:**

Platform as a Service (PaaS) is an evolutionary approach to delivering middleware and database capacity needed to host applications. Platform as a Service (PaaS) is a standardized, shared and elastically scalable application development and deployment platform delivered as a service

**Physical Description:**

Implementation of a hybrid Platform as a Service solution. Implementation of hardware and PaaS software. Standardized, well defined use cases and reference architectures, in addition to proof of concept exercises.

**Project Justification:**

Lower application development and support costs.  
 Ability to easily scale up and down based on capacity and performance needs.  
 Ability to more rapidly deploy environments for development, testing and production

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00782.0  
Category: H. Information Technology  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00782A - PT15898 SE Application Platform Technology Refresh

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A



**Beginning of Workpaper Sub Details for  
Workpaper Group 00782A**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00782.0  
 Category: H. Information Technology  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00782A - PT15898 SE Application Platform Technology Refresh  
 Workpaper Detail: 00782A.001 - Platform as a Service (PaaS) is an evolutionary approach to delivering middleware and d  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |            |            |  |
|--------------------------|--------------|----------|------------|------------|--|
| Years                    |              | 2014     | 2015       | 2016       |  |
| Labor                    |              | 0        | 334        | 334        |  |
| Non-Labor                |              | 0        | 275        | 650        |  |
| NSE                      |              | 0        | 0          | 0          |  |
|                          | <b>Total</b> | <b>0</b> | <b>609</b> | <b>984</b> |  |
| FTE                      |              | 0.0      | 3.3        | 3.3        |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00788C - PT15811 Enterprise Analytics System (EAS) Phase II**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00788.0  
 Category: H. Information Technology  
 Category-Sub: 2. Improving Customer Experience  
 Workpaper Group: 00788C - PT15811 Enterprise Analytics System (EAS) Phase II

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |            |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016       |
| <b>Years</b>    |            |                   |          |          |          |          |                   |          |            |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 52         |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 400        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0          |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>0</b> | <b>452</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.0      | 0.5        |

**Business Purpose:**

Continued build out of the EAS platform as defined by the EAS Roadmap that was developed in 2013. This project will build out the platform to support additional analytics and dashboarding that is needed by the business, including SDG&E, SoCal Gas and Corporate Center.

**Physical Description:**

Implement new data sources and refactor existing data sources, as identified in the EAS Roadmap. Deploy hardware and software to extend the analytics platform(s), for continued analytics and self service. Included in scope is the process of improving data quality for the newly added data sources.

**Project Justification:**

Minimize the number of siloed analytics deployments that potentially result in point solutions. Move toward an "On Demand" analytics platform for faster, better, easier deployment of analytics across the enterprise.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00788.0  
Category: H. Information Technology  
Category-Sub: 2. Improving Customer Experience  
Workpaper Group: 00788C - PT15811 Enterprise Analytics System (EAS) Phase II

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00788C**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00788.0  
 Category: H. Information Technology  
 Category-Sub: 2. Improving Customer Experience  
 Workpaper Group: 00788C - PT15811 Enterprise Analytics System (EAS) Phase II  
 Workpaper Detail: 00788C.001 - Continued build out of the EAS platform as defined by the EAS Roadmap that was developed  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |          |            |  |
|--------------------------|--------------|----------|----------|------------|--|
| Years                    |              | 2014     | 2015     | 2016       |  |
| Labor                    |              | 0        | 0        | 52         |  |
| Non-Labor                |              | 0        | 0        | 400        |  |
| NSE                      |              | 0        | 0        | 0          |  |
|                          | <b>Total</b> | <b>0</b> | <b>0</b> | <b>452</b> |  |
| FTE                      |              | 0.0      | 0.0      | 0.5        |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00756C - PT81434 2016 GRC Results of Op Model**



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00756.0  
 Category: H. Information Technology  
 Category-Sub: 3. Mandated  
 Workpaper Group: 00756C - PT81434 2016 GRC Results of Op Model

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016     |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 46                | 0        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 116               | 0        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>162</b>        | <b>0</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.5               | 0.0      | 0.0      |

**Business Purpose:**

CPUC requires the major California Energy utilities to provide with their GRC Applications a stand-alone Microsoft Excel based model which will dynamically calculate a revenue requirement. The model must be user-friendly, able to recalculate all taxes, working cash, and depreciation. Failure to file with the expected model may result in delay of Commission decision and/or penalty.

**Physical Description:**

CPUC requires the major California Energy utilities to provide with their GRC Applications a stand-alone Microsoft Excel based model which will dynamically calculate a revenue requirement. The model must be user-friendly, able to recalculate all taxes, working cash, and depreciation. Failure to file with the expected model may result in delay of Commission decision and/or penalty.

**Project Justification:**

The primary objective of this project is to satisfy CPUC filing requirements and thus reduce the potential for a delay in GRC filing approval. Benefits include:  
 Accurate representation of SDGE and SoCalGas GRC request ensure proper recovery of authorized costs.  
 Accurate internal assessment of earnings and cash flow by Financial Planning, Accounting, GRC Case management  
 Accurate assessment of bill impacts Rate Design  
 Accurate and timely information will be available for Witness presentation to Executive Committee held in May 2014.  
 Notice of Intent Filing in scheduled for August 2014.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00756.0  
Category: H. Information Technology  
Category-Sub: 3. Mandated  
Workpaper Group: 00756C - PT81434 2016 GRC Results of Op Model

**Forecast Methodology:**

**Labor - Zero-Based**

Project is currently in - progress. Based on actual timeline of the project to complete.

**Non-Labor - Zero-Based**

Project is currently in - progress. Based on actual timeline of the project to complete.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00756C**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00756.0  
 Category: H. Information Technology  
 Category-Sub: 3. Mandated  
 Workpaper Group: 00756C - PT81434 2016 GRC Results of Op Model  
 Workpaper Detail: 00756C.001 - 2016 GRC Results of Op Model  
 In-Service Date: 12/31/2014  
 Description:

| Forecast In 2013 \$(000) |            |          |          |  |
|--------------------------|------------|----------|----------|--|
| Years                    | 2014       | 2015     | 2016     |  |
| Labor                    | 46         | 0        | 0        |  |
| Non-Labor                | 116        | 0        | 0        |  |
| NSE                      | 0          | 0        | 0        |  |
| <b>Total</b>             | <b>162</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 0.5        | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00751A - PT81380 SAP SUPER USER PROVISIONING**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00751.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00751A - PT81380 SAP SUPER USER PROVISIONING

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016     |
| Years           |            |                   |          |          |          |          |                   |          |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 17                | 0        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>17</b>         | <b>0</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.2               | 0.0      | 0.0      |

**Business Purpose:**

Sempra purchased SAP Governance Risk Compliance (GRC) Super User Provisioning and Enterprise Role Management tools at the end of 2010. Implementation of the tools will save the SAP Security team over 450 hours per year in account administration and processing. The present process requires the requestor submit an online form with justification of the access request. This starts a string of E-mails. The requestor must also get data owner approval and a SAP Managers approval. SAP security then grants the access and removes the access at the approved times. SAP Security must retain the entire string of E-mails for Audit purposes (original request, data owner and SAP manager approvals, access granted and access removal). The Super User Provisioning tool will eliminate the manual process by allowing users to check out Logon ID's that have preapproved access 24 hours a day. The tool also captures all actions done for the Logon ID while it is checked out and can send a log of all the actions to the owner of the Logon ID to verify that the actions performed during the time was checked out were valid. The tool also allows SAP Security to more easily run reports for Audit. This tool will enable IT to address Audit MCA and SOX compliance requirements for firecall process.

Enterprise Role Management will meet an Audit requirement for the tracking of Role owner approval of creation and changes to SAP roles. The tool uses a workflow process that will send notification to the Role owner requesting approval for a role creation or change to a role they own. It will then capture their approval or denial of the action. SAP Security can then run reports for the approvals for audit.

**Physical Description:**

Enhance compliance with SOX controls E.2.2, E.4.1, E4.4  
 Address Audit MCA; CNI audit and Business Control Issue 1 and 2  
 Analysis Firecall request for the last year to determine the need for Super User roles and Logon IDs.  
 Build Super User roles and Logon IDs. (approximately 100 roles)  
 Test Super User roles and Logon IDs.  
 Determine Super User Logon ID / Role owners. (approximately 50 role owners)  
 Determine Super User Logon ID Users  
 Configure Super User Provisioning tool.  
 Train SAP security, Super User Logon ID owners and users.  
 Develop process for review of users with access to Super User Logon IDs

**Project Justification:**

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00751.0  
Category: H. Information Technology  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00751A - PT81380 SAP SUPER USER PROVISIONING

Sempra purchased SAP Governance Risk Compliance (GRC) Super User Provisioning and Enterprise Role Management tools at the end of 2010. Implementation of the tools will save the SAP Security team over 450 hours per year in account administration and processing. The present process requires the requestor submit an online form with justification of the access request. This starts a string of E-mails. The requestor must also get data owner approval and a SAP Managers approval. SAP security then grants the access and removes the access at the approved times. SAP Security must retain the entire string of E-mails for Audit purposes (original request, data owner and SAP manager approvals, access granted and access removal). The Super User Provisioning tool will eliminate the manual process by allowing users to check out Logon ID's that have preapproved access 24 hours a day. The tool also captures all actions done for the Logon ID while it is checked out and can send a log of all the actions to the owner of the Logon ID to verify that the actions performed during the time was checked out were valid. The tool also allows SAP Security to more easily run reports for Audit. This tool will enable IT to address Audit MCA and SOX compliance requirements for firecall process.

Enterprise Role Management will meet an Audit requirement for the tracking of Role owner approval of creation and changes to SAP roles. The tool uses a workflow process that will send notification to the Role owner requesting approval for a role creation or change to a role they own. It will then capture their approval or denial of the action. SAP Security can then run reports for the approvals for audit.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00751.0  
Category: H. Information Technology  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00751A - PT81380 SAP SUPER USER PROVISIONING

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A



**Beginning of Workpaper Sub Details for  
Workpaper Group 00751A**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00751.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00751A - PT81380 SAP SUPER USER PROVISIONING  
 Workpaper Detail: 00751A.001 - SAP SUPER USER PROVISIONING  
 In-Service Date: 03/31/2014  
 Description:

| Forecast In 2013 \$(000) |           |          |          |  |
|--------------------------|-----------|----------|----------|--|
| Years                    | 2014      | 2015     | 2016     |  |
| Labor                    | 17        | 0        | 0        |  |
| Non-Labor                | 0         | 0        | 0        |  |
| NSE                      | 0         | 0        | 0        |  |
| <b>Total</b>             | <b>17</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 0.2       | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00760A - PT14853 ITSM Tool Optimization**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00760.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00760A - PT14853 ITSM Tool Optimization

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |            |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 179               | 177        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 510               | 300        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>689</b>        | <b>477</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 1.8               | 1.7        | 0.0      |

**Business Purpose:**

This project will bridge IT Service Management (ITSM) tool gaps encountered during the Client Support Services (CSS) Transition phase and will add new tool functionality required to support CSS continuous service improvement and transformational activities

**Physical Description:**

Implementations for this project are expected to include additional IT Service Management (ITSM) system capacity, system integrations, automatic workflow configurations, software licenses, along with the implementation of new ITSM modules and desktop management tools to increase IT self-service offerings, and the shifting of IT Services from 2nd and 3rd level support over to 1st level support.

**Project Justification:**

Incremental self-service offerings and the shifting of IT services from 2nd level over to 1st level support will increase client satisfaction and productivity by resolving requests and incidents in a significantly shorter time frame, as well as increase IT operation efficiencies by reducing the labor required to handle these services.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00760.0  
Category: H. Information Technology  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00760A - PT14853 ITSM Tool Optimization

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00760A**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00760.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00760A - PT14853 ITSM Tool Optimization  
 Workpaper Detail: 00760A.001 - ITSM Tool Optimization  
 In-Service Date: 03/31/2015  
 Description:

| Forecast In 2013 \$(000) |            |            |          |  |
|--------------------------|------------|------------|----------|--|
| Years                    | 2014       | 2015       | 2016     |  |
| Labor                    | 179        | 177        | 0        |  |
| Non-Labor                | 510        | 300        | 0        |  |
| NSE                      | 0          | 0          | 0        |  |
| <b>Total</b>             | <b>689</b> | <b>477</b> | <b>0</b> |  |
| FTE                      | 1.8        | 1.7        | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00760E - PT16935 Forensics Lab Infrastructure Refresh**



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00760.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00760E - PT16935 Forensics Lab Infrastructure Refresh

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |              |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|--------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016         |
| <b>Years</b>    |            |                   |          |          |          |          |                   |          |              |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 122          |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 1,700        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0            |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>0</b> | <b>1,822</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.0      | 1.2          |

**Business Purpose:**

This project will evaluate current technologies and replace obsolete infrastructure implemented with the 2011 Enterprise Forensics project to established the current state Forensics Lab. In 2016 the project will refresh the hardware components and re-evaluate the software aspects to ensure current business,

**Physical Description:**

Replace end of life Forensics systems

**Project Justification:**

Legal and Information Security forensics capabilities and security requirements are being met.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00760.0  
Category: H. Information Technology  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00760E - PT16935 Forensics Lab Infrastructure Refresh

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00760E**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00760.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00760E - PT16935 Forensics Lab Infrastructure Refresh  
 Workpaper Detail: 00760E.001 - Replace end of life Forensics systems  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |          |              |  |
|--------------------------|--------------|----------|----------|--------------|--|
| Years                    |              | 2014     | 2015     | 2016         |  |
| Labor                    |              | 0        | 0        | 122          |  |
| Non-Labor                |              | 0        | 0        | 1,700        |  |
| NSE                      |              | 0        | 0        | 0            |  |
|                          | <b>Total</b> | <b>0</b> | <b>0</b> | <b>1,822</b> |  |
| FTE                      |              | 0.0      | 0.0      | 1.2          |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00768C - PT15804 Microsoft Business Intelligence (BI) Enterprise Platform**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00768.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00768C - PT15804 Microsoft Business Intelligence (BI) Enterprise Platform

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |            |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016       |
| <b>Years</b>    |            |                   |          |          |          |          |                   |          |            |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 261        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 200        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0          |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>0</b> | <b>461</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.0      | 2.6        |

**Business Purpose:**

There are several projects and client departments that are utilizing Microsoft Business intelligenc (MSBI) tools today (see list below). In addition, there are other groups that have either expressed interest in Microsoft BI based solutions or groups like Reliability Standards Compliance and Cognos users that utilize some portion of the Microsoft BI stack. What is lacking is a formal project to implement the infrastructure and support structure to enable the capabilities of the Microsoft BI stack in an Enterprise envionment. The purpose of this project is to address these gaps. Client departments and projects with MS BI requirements include:

- Electric & Fuels Procurement
- Sempra Corporate Tax Department
- TFS Reporting
- Vegetation Management Project
- SoCalGas AMI project
- IT Customer Care
- D3 Corporate Security
- OSI Pi

Microsoft BI tools are here now in many department silow solutions and increasingly being adopted by client departments to meet their growing requirements for actionable information. Currently each project team is purchasing, installing and utilizing one or more portions of the MSBI stack. Effectively the individual projects are spending the money for an Enterprise MSBI solution but not in an enterprise supported model. While the SAP Business Objects Platform is the enterprise BI/Reporting standard, an Enterprise level Microsoft BI platform is also needed to support the growing number of vendors solutions and clients that rely heavily on these products. Implementing this platform at an enterprise level would include enabling capabilities which Sempra has owned for many years but which have not been available or supported at an enterprise level: SQL Server Integration Services (SSIS), SQL Server Analysis Services (SSAS), SQL Server Reporting Services (SSRS) which are part of the MS SQL Server database platform. In addition there is a growing need to integrate SSRS capabilities with the MS SharePoint 2010/2013 envir

**Physical Description:**

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00768.0  
Category: H. Information Technology  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00768C - PT15804 Microsoft Business Intelligence (BI) Enterprise Platform

This project will implement an enterprise level Microsoft BI platform and support model. Supporting all existing Microsoft BI systems:

- Electric & Fuels Procurement
- Reliability Standards Compliance

Including building enough capacity to support all currently planned Microsoft BI projects:

- Corporate Tax BI project
- Vegetation Management

With enough capacity to handle one years worth of expected growth.

**Project Justification:**

Microsoft BI based solutions are continuing to be selected to satisfy client departmental needs. The purpose of this project is to support this ongoing growth of this technology in an environment that is both planned for and supported in an Enterprise model. At this point most of the benefits are soft but obvious in light of the industry growth of this technology.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00768.0  
Category: H. Information Technology  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00768C - PT15804 Microsoft Business Intelligence (BI) Enterprise Platform

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A



**Beginning of Workpaper Sub Details for  
Workpaper Group 00768C**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00768.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00768C - PT15804 Microsoft Business Intelligence (BI) Enterprise Platform  
 Workpaper Detail: 00768C.001 - There are several projects and client departments that are utilizing Microsoft Business  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |          |          |            |  |
|--------------------------|----------|----------|------------|--|
| Years                    | 2014     | 2015     | 2016       |  |
| Labor                    | 0        | 0        | 261        |  |
| Non-Labor                | 0        | 0        | 200        |  |
| NSE                      | 0        | 0        | 0          |  |
| <b>Total</b>             | <b>0</b> | <b>0</b> | <b>461</b> |  |
| FTE                      | 0.0      | 0.0      | 2.6        |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00770AA - PT15932 Web Application Database Firewalls**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00770AA - PT15932 Web Application Database Firewalls

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |              |      |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|--------------|------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015         | 2016 |
| <b>Years</b>    |            |                   |          |          |          |          |                   |              |      |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 451          |      |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 2,678        |      |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0            |      |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>3,129</b> |      |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 4.4          |      |

**Business Purpose:**

Sempra uses web applications across multiple business units and multiple compliance areas. As changes and updates occur to these web applications and as malicious technology advances we are vulnerable to attacks to and through these systems. Implementing a Web Application Firewall (WAF) would be an added layer of protection to block and alert on these attacks. The web application firewall technology would also provide compliance for multiple regulations, ensuring we are compliant in defending our systems.

**Physical Description:**

Replace end of life web application and database firewalls in RB / MPK data centers

**Project Justification:**

This project will provide placement of Web Application Firewalls at the RB and MPK perimeters to monitor both requests from the internet and the internal corporate network for attacks against those networks. They would also be placed in key locations for web facing applications as regulatory compliance dictates. Deeper inspection of traffic and requests to applications using protection profiles tailored specifically to the applications it will be protecting. Envoy and My Account are examples. Assist in preventing data loss from and intrusions into our most critical data and applications; customer data, employee data and SCADA applications.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00770.0  
Category: H. Information Technology  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00770AA - PT15932 Web Application Database Firewalls

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00770AA**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00770AA - PT15932 Web Application Database Firewalls  
 Workpaper Detail: 00770AA.001 - Replace end of life web application and database firewalls in RB / MPK data centers  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |          |            |  |
|--------------------------|--------------|----------|----------|------------|--|
| Years                    |              | 2014     | 2015     | 2016       |  |
| Labor                    |              | 0        | 0        | 61         |  |
| Non-Labor                |              | 0        | 0        | 368        |  |
| NSE                      |              | 0        | 0        | 0          |  |
|                          | <b>Total</b> | <b>0</b> | <b>0</b> | <b>429</b> |  |
| FTE                      |              | 0.0      | 0.0      | 0.6        |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00770AA - PT15932 Web Application Database Firewalls  
 Workpaper Detail: 00770AA.002 - Web Application Database Firewalls Phase 2  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |          |              |  |
|--------------------------|--------------|----------|----------|--------------|--|
| Years                    |              | 2014     | 2015     | 2016         |  |
| Labor                    |              | 0        | 0        | 268          |  |
| Non-Labor                |              | 0        | 0        | 1,365        |  |
| NSE                      |              | 0        | 0        | 0            |  |
|                          | <b>Total</b> | <b>0</b> | <b>0</b> | <b>1,633</b> |  |
| FTE                      |              | 0.0      | 0.0      | 2.6          |  |

*Note: Totals may include rounding differences.*



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00770AA - PT15932 Web Application Database Firewalls  
 Workpaper Detail: 00770AA.003 - Replace end of life web application and database firewalls in RB / MPK data centers  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |          |              |  |
|--------------------------|--------------|----------|----------|--------------|--|
| Years                    |              | 2014     | 2015     | 2016         |  |
| Labor                    |              | 0        | 0        | 122          |  |
| Non-Labor                |              | 0        | 0        | 945          |  |
| NSE                      |              | 0        | 0        | 0            |  |
|                          | <b>Total</b> | <b>0</b> | <b>0</b> | <b>1,067</b> |  |
| FTE                      |              | 0.0      | 0.0      | 1.2          |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00770C - PT14838 End Point Security Project**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00770C - PT14838 End Point Security Project

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |              | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |          |
|-----------------|--------------|-------------------|----------|----------|----------|----------|-------------------|------------|----------|
|                 |              | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016     |
|                 | <b>Years</b> |                   |          |          |          |          |                   |            |          |
| Labor           | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 191               | 232        | 0        |
| Non-Labor       | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 2,350             | 300        | 0        |
| NSE             | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0        |
|                 | <b>Total</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>2,541</b>      | <b>532</b> | <b>0</b> |
| FTE             | Zero-Based   | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 1.9               | 2.3        | 0.0      |

**Business Purpose:**

This project will evaluate advanced anti-malware security controls for client technology to augment the current standard (Trend Micro) anti-virus solution. The controls will include both endpoint and network based solutions. The project will assess controls that will function at a network level for all devices connected to the Sempra network, and at the end point for Sempra supported systems. Collectively, these solutions would be capable of supporting BYOD and third party contractors as the internal policies would require. An RFP followed by a Proof of Concept will be conducted to evaluate and compare solution capabilities. The project will partner with Network Engineering, SOC, and Client Technology Services and the new third party support organization (Compucom) on the solution requirements, deployment, and on going operational support.

**Physical Description:**

The project will implement network based detection and prevention capabilities for advance malware. Tuning will advance over time as the standard implementation process necessary to tune the solution for optimum results with minimal negative impact on clients and systems. The project will implement, through a phased deployment, specific configurations of the advanced malware agent to Sempra Energy standard host computing systems. Solution, incident response process and handing training procedures training and improvements will be delivered to accommodate the advanced technology capabilities.

**Project Justification:**

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00770.0  
Category: H. Information Technology  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00770C - PT14838 End Point Security Project

Reduced risk of unauthorized access and exposure for covered (regulation) and sensitive (company policy) data.  
Improved reaction time for potential system or data compromised through better visibility and stronger detection.  
Reduced system and business process downtime from malware infection or compromise.  
Reduced liability and impacts from advanced malware attacks that compromise sensitive company information including, financials, tax, customer and employee records (malicious attack scenario)  
Visibility into advanced persistent threats – attacks or threats that expose systems or data to low threshold exposure over long periods of time that basic security controls cannot detect.  
Compliance with the following:  
CA Privacy Laws and CA Public Utility Code require the protection of customer information from disclosure. Protecting and or preventing data disclosure of covered information precludes the requirement to file a mandatory breach notification as well as provide customers with the assurance their data is adequately protected. Although regulations do not stipulate the specific type of solution necessary to support those requirements, investing in advanced capabilities minimizes the risk associated to the impact of a breach and the related civil penalties associated to breach notification and customer credit protection.  
CA Civil Code 1798.80-1798.85 (This includes the Records Disposal Act, “Shine the Light,” Security Breach Notification, and Security of Personal Information Laws)  
CA Business and Professions Code 22575-22579 - Online Privacy Protection act of 2003  
Cal. Bus. and Prof. Code §17538.43 - California Junk Fax Law  
Cal. Pub. Util. Code §394.4 and CPUC Privacy Decisions

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00770.0  
Category: H. Information Technology  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00770C - PT14838 End Point Security Project

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00770C**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00770C - PT14838 End Point Security Project  
 Workpaper Detail: 00770C.001 - End Point Security  
 In-Service Date: 03/31/2015  
 Description:

| Forecast In 2013 \$(000) |              |              |            |          |  |
|--------------------------|--------------|--------------|------------|----------|--|
| Years                    |              | 2014         | 2015       | 2016     |  |
| Labor                    |              | 191          | 232        | 0        |  |
| Non-Labor                |              | 2,350        | 300        | 0        |  |
| NSE                      |              | 0            | 0          | 0        |  |
|                          | <b>Total</b> | <b>2,541</b> | <b>532</b> | <b>0</b> |  |
| FTE                      |              | 1.9          | 2.3        | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00770F - PT14865 Information Security - Infrastructure Reliability**



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00770F - PT14865 Information Security - Infrastructure Reliability

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |            |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016       |
| <b>Years</b>    |            |                   |          |          |          |          |                   |            |            |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0          |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 350               | 350        | 350        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0          |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>350</b>        | <b>350</b> | <b>350</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.0        | 0.0        |

**Business Purpose:**

Sempra uses web applications across multiple business units and multiple compliance areas. As changes and updates occur to these web applications and as malicious technology advances we are vulnerable to attacks to and through these systems. Implementing a Web Application Firewall (WAF) would be an added layer of protection to block and alert on these attacks. The web application firewall technology would also provide compliance for multiple regulations, ensuring we are compliant in defending our systems.

**Physical Description:**

All projects completed

**Project Justification:**

Placement of Web Application Firewalls at the RB and MPK perimeters to monitor both requests from the internet and the internal corporate network for attacks against those networks. They would also be placed in key locations for web facing applications as regulatory compliance dictates. Deeper inspection of traffic and requests to applications using protection profiles tailored specifically to the applications it will be protecting. Envoy and My Account are examples. Assist in preventing data loss from and intrusions into our most critical data and applications; customer data, employee data and SCADA applications.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00770.0  
Category: H. Information Technology  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00770F - PT14865 Information Security - Infrastructure Reliability

**Forecast Methodology:**

**Labor - Zero-Based**

N/A

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00770F**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00770F - PT14865 Information Security - Infrastructure Reliability  
 Workpaper Detail: 00770F.001 - Information Security infrastructure reliability blanket capital for 2014 projects under  
 In-Service Date: Not Applicable  
 Description:

| Forecast In 2013 \$(000) |            |            |            |  |
|--------------------------|------------|------------|------------|--|
| Years                    | 2014       | 2015       | 2016       |  |
| Labor                    | 0          | 0          | 0          |  |
| Non-Labor                | 350        | 350        | 350        |  |
| NSE                      | 0          | 0          | 0          |  |
| <b>Total</b>             | <b>350</b> | <b>350</b> | <b>350</b> |  |
| FTE                      | 0.0        | 0.0        | 0.0        |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00770Y - PT 15930 Intrusion Prevention Systems IPS Refresh**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00770Y - PT 15930 Intrusion Prevention Systems IPS Refresh

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |              |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|--------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016         |
| <b>Years</b>    |            |                   |          |          |          |          |                   |          |              |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 262          |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 2,625        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0            |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>0</b> | <b>2,887</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.0      | 2.6          |

**Business Purpose:**

This project will replace the Intrusion Prevention Systems (IPS) at the company's data center facilities which have reached end of life and end of support from the manufacturer. The new system will allow the company to continue protecting assets and data from malicious attempts to compromise the security of Information Technology (IT) systems.

**Physical Description:**

Conduct an RFP to identify the right technology based on current standards, attack trends, and anticipated future capability needs.

**Project Justification:**

Replace end of life Intrusion Prevention Systems in RB / MPK data centers

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00770.0  
Category: H. Information Technology  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00770Y - PT 15930 Intrusion Prevention Systems IPS Refresh

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00770Y**



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00770Y - PT 15930 Intrusion Prevention Systems IPS Refresh  
 Workpaper Detail: 00770Y.001 - Replace end of life Intrusion Prevention Systems in RB / MPK data centers  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |          |              |
|--------------------------|--------------|----------|----------|--------------|
|                          | Years        | 2014     | 2015     | 2016         |
| Labor                    |              | 0        | 0        | 262          |
| Non-Labor                |              | 0        | 0        | 2,625        |
| NSE                      |              | 0        | 0        | 0            |
|                          | <b>Total</b> | <b>0</b> | <b>0</b> | <b>2,887</b> |
| FTE                      |              | 0.0      | 0.0      | 2.6          |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00770Z - PT15931 Source Code Security**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00770Z - PT15931 Source Code Security

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |      |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016 |
| <b>Years</b>    |            |                   |          |          |          |          |                   |            |      |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 209        |      |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 700        |      |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          |      |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>909</b> |      |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 2.0        |      |

**Business Purpose:**

This project will implement a software vulnerability detection and analysis capability which will help reduce the risk of security flaws in production systems and applications during the Software Development Lifecycle (SDLC). Software security flaws are one of the most prevalent mechanisms enabling breaches today. Software supporting everything from Internet websites to workstation applications provide a conduit that allow attackers to take advantage of vulnerabilities if the underlying code is not scrutinized as it is being written. This project will allow Sempra Utilities to scrutinize self-developed software as well as software obtained from 3rd parties to identify and correct vulnerabilities.

**Physical Description:**

Implement a software vulnerability detection and analysis capability which will help reduce the risk of security flaws in production systems and applications during the Software Development Lifecycle (SDLC)

**Project Justification:**

This project will allow Sempra Utilities to scrutinize self-developed software as well as software obtained from 3rd parties to identify and correct vulnerabilities.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00770.0  
Category: H. Information Technology  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00770Z - PT15931 Source Code Security

**Forecast Methodology:**

**Labor - Zero-Based**

Based on internal labor hours estimated

**Non-Labor - Zero-Based**

Based on historical vendor estimates

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00770Z**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00770.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00770Z - PT15931 Source Code Security  
 Workpaper Detail: 00770Z.001 - Source Code Security  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |          |            |
|--------------------------|--------------|----------|----------|------------|
|                          | Years        | 2014     | 2015     | 2016       |
| Labor                    |              | 0        | 0        | 209        |
| Non-Labor                |              | 0        | 0        | 700        |
| NSE                      |              | 0        | 0        | 0          |
|                          | <b>Total</b> | <b>0</b> | <b>0</b> | <b>909</b> |
| FTE                      |              | 0.0      | 0.0      | 2.0        |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00772C - PT14850 SE System Management and Automation**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00772C - PT14850 SE System Management and Automation

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |              |              |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|--------------|--------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015         | 2016         |
| Years           |            |                   |          |          |          |          |                   |              |              |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 1,740        | 603          |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 400          | 400          |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0            | 0            |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>2,140</b> | <b>1,003</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 17.1         | 5.9          |

**Business Purpose:**

Centralized configuration management of infrastructure devices, network and server, allowing for remote management, notification, and verification. Automated provisioning environment enhancements and updating allowing for future improvements in speed, quality, and ease of use. Additionally allow for the deployment of Windows Server 2012.

**Physical Description:**

Deploy and configure software allowing for remote management of infrastructure devices. Upgrade the current provisioning environment to take advantage of software improvements.

**Project Justification:**

Reduce the time that is necessary for our systems administrators to manage and evaluate devices for maintenance and support.

*Note: Totals may include rounding differences.*



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00772.0  
Category: H. Information Technology  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00772C - PT14850 SE System Management and Automation

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Purchase a central configuration software for use by all our devices. Enhance our provisioning software by installing the latest version and make additional system enhancements.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00772C**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00772C - PT14850 SE System Management and Automation  
 Workpaper Detail: 00772C.001 - Centralized configuration management of infrastructure devices, network and server, all  
 In-Service Date: 12/31/2015  
 Description:

| Forecast In 2013 \$(000) |              |          |              |              |  |
|--------------------------|--------------|----------|--------------|--------------|--|
| Years                    |              | 2014     | 2015         | 2016         |  |
| Labor                    |              | 0        | 1,740        | 603          |  |
| Non-Labor                |              | 0        | 400          | 400          |  |
| NSE                      |              | 0        | 0            | 0            |  |
|                          | <b>Total</b> | <b>0</b> | <b>2,140</b> | <b>1,003</b> |  |
| FTE                      |              | 0.0      | 17.1         | 5.9          |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00772E - PT14852 SE Enterprise Application Messaging and Caching Platform**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00772E - PT14852 SE Enterprise Application Messaging and Caching Platform

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |            |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 390        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 285        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>675</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 3.8        | 0.0      |

**Business Purpose:**

Our enterprise integration environments today make use of application specific and centralized messaging systems. Messaging related considerations such as fault tolerance, capacity, performance, security, routing, metadata, subscription and policy are handled as point solutions. We are constantly reinventing the wheel. We have not currently implemented a solution for data caching. An enterprise application messaging and caching platform will provide for standardization via defined use cases and reference architectures for these solutions.

**Physical Description:**

Formulation of messaging and caching use cases and reference architectures. Implementation of hardware and previously acquired software. Proof of concept excercises.

**Project Justification:**

Lower application integration project and support costs.  
 Maximize the value of our existing Oracle Middleware investment while we have unlimited access to these products.  
 Higher levels of fault tolerance, capacity and performance.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00772.0  
Category: H. Information Technology  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00772E - PT14852 SE Enterprise Application Messaging and Caching Platform

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Based on general HW list price estimates

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00772E**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00772E - PT14852 SE Enterprise Application Messaging and Caching Platform  
 Workpaper Detail: 00772E.001 - Our enterprise integration environments today make use of application specific and cent  
 In-Service Date: 12/31/2015  
 Description:

| Forecast In 2013 \$(000) |              |          |            |          |  |
|--------------------------|--------------|----------|------------|----------|--|
| Years                    |              | 2014     | 2015       | 2016     |  |
| Labor                    |              | 0        | 390        | 0        |  |
| Non-Labor                |              | 0        | 285        | 0        |  |
| NSE                      |              | 0        | 0          | 0        |  |
|                          | <b>Total</b> | <b>0</b> | <b>675</b> | <b>0</b> |  |
| FTE                      |              | 0.0      | 3.8        | 0.0      |  |

*Note: Totals may include rounding differences.*



**Beginning of Workpaper Group**  
**00772K - PT15891B SE EWE Self Service Web provision/deployment**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00772K - PT15891B SE EWE Self Service Web provision/deployment

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |            |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016       |
| <b>Years</b>    |            |                   |          |          |          |          |                   |          |            |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 186        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 50         |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0          |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>0</b> | <b>236</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.0      | 1.8        |

**Business Purpose:**

Build upon the success of the newly enhanced EWE by enabling a self-service application to provide website services and provisioning on demand.

**Physical Description:**

Provisioning function will only be applicable to the EWE environment. Research available tools and build / construct interfaces that would allow for self-service provisioning of websites within the EWE infrastructure.

**Project Justification:**

The ability to provision and build websites as guided by the user frees up the administrator and will streamline process. The cost savings involved in utilizing the shared environment vs. utilizing new server hardware and software could be another benefit.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00772.0  
Category: H. Information Technology  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00772K - PT15891B SE EWE Self Service Web provision/deployment

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00772K**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00772K - PT15891B SE EWE Self Service Web provision/deployment  
 Workpaper Detail: 00772K.001 - Build upon the success of the newly enhanced EWE by enabling a self-service application  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |          |            |  |
|--------------------------|--------------|----------|----------|------------|--|
| Years                    |              | 2014     | 2015     | 2016       |  |
| Labor                    |              | 0        | 0        | 186        |  |
| Non-Labor                |              | 0        | 0        | 50         |  |
| NSE                      |              | 0        | 0        | 0          |  |
|                          | <b>Total</b> | <b>0</b> | <b>0</b> | <b>236</b> |  |
| FTE                      |              | 0.0      | 0.0      | 1.8        |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00772N - PT16884 SE Backup Systems**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00772N - PT16884 SE Backup Systems

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |            |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016       |
| <b>Years</b>    |            |                   |          |          |          |          |                   |          |            |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 36         |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 320        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0          |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>0</b> | <b>356</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.0      | 0.4        |

**Business Purpose:**

This project will purchase, install, allocate, and provide incremental backup network (NetBackup) and virtual tape library capacity to meet the projected needs of small to medium sized projects in 2016.

**Physical Description:**

This project will purchase, install, allocate, and provide incremental backup network (NetBackup) and virtual tape library capacity

**Project Justification:**

The incremental backup network capacity will allow Computing Infrastructure to meet compute backup and restore requests.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00772.0  
Category: H. Information Technology  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00772N - PT16884 SE Backup Systems

**Forecast Methodology:**

**Labor - Zero-Based**

Assumes backup network capacity forecast for small-to-medium size projects and requests is accurate. Large programs or requests not included in forecast may be required to fund additional capacity during the year.

**Non-Labor - Zero-Based**

Assumes backup network capacity forecast for small-to-medium size projects and requests is accurate. Large programs or requests not included in forecast may be required to fund additional capacity during the year.

**NSE - Zero-Based**

N/A



**Beginning of Workpaper Sub Details for  
Workpaper Group 00772N**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00772.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00772N - PT16884 SE Backup Systems  
 Workpaper Detail: 00772N.001 - This project will purchase, install, allocate, and provide incremental backup network (  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |          |            |  |
|--------------------------|--------------|----------|----------|------------|--|
| Years                    |              | 2014     | 2015     | 2016       |  |
| Labor                    |              | 0        | 0        | 36         |  |
| Non-Labor                |              | 0        | 0        | 320        |  |
| NSE                      |              | 0        | 0        | 0          |  |
|                          | <b>Total</b> | <b>0</b> | <b>0</b> | <b>356</b> |  |
| FTE                      |              | 0.0      | 0.0      | 0.4        |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00773A - PT81403 TELECOMMUNICATIONS EXPENSE MANAGEMENT**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00773.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00773A - PT81403 TELECOMMUNICATIONS EXPENSE MANAGEMENT

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |          |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 203               | 0        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 490               | 0        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>693</b>        | <b>0</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 2.0               | 0.0      | 0.0      |

**Business Purpose:**

Implement a Telecom expense management lifecycle. The Telecom lifecycle will establish methodologies, processes and tools to manage telecom voice and mobile assets and services throughout the lifecycle of telecom assets. The project will employ "best of breed" TEM managed service vendor to process telecom invoices and wireless order fulfillment request with options for wireless help desk support. Project team will purchase software and host at vendor site. The host vendor will support and manage a fully integrated Telecom Expense Management application for inventory management, invoice management, wire-line and wireless order fulfillment and interface with existing human resources, accounts payable, general ledger (SAP), Help Desk Ticket, asset management and contract management systems and applications. Sempra resources will utilize TEM new tools to optimize cost and expand self-service through out companies.

**Physical Description:**

Interface with existing applications and systems  
 Human Resources  
 Accounts Payable  
 Help Desk(Ticketing)  
 Asset Management (Trax or Service Now)  
 General Ledger (SAP)  
 Use a SaaS "Software as a Service" hosting model  
 Integrate existing call detail records into TEM application  
 Company login interface for user single sign-on (SSO) and validation to the "Active Directory"  
 Ability to control access control lists (ACLs) and groups. Must be able to assign different privileges to each role

**Project Justification:**

The projected annual spend for wireless and wire line expenses will exceed \$15MM in 2013. Sempra's methodologies for processing telecom invoices are inefficient, supported by obsolete/unsupported tools and procedures that do not adhere to accounts payable and general ledger work flow standards. In addition, the wireless and wire-line procurement and asset management lacks governance and visibility across the Enterprise. With the current processes and tools in place we are unable to effectively catch billing errors resulting in overpaying an estimated 3% of annual spend.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00773.0  
Category: H. Information Technology  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00773A - PT81403 TELECOMMUNICATIONS EXPENSE MANAGEMENT

**Forecast Methodology:**

**Labor - Zero-Based**

The forecast is based upon the current project timeline.

**Non-Labor - Zero-Based**

The forecast is based upon the current project timeline.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00773A**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00773.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00773A - PT81403 TELECOMMUNICATIONS EXPENSE MANAGEMENT  
 Workpaper Detail: 00773A.001 - TELECOMMUNICATIONS EXPENSE MANAGEMENT  
 In-Service Date: 12/31/2014  
 Description:

| Forecast In 2013 \$(000) |            |          |          |  |
|--------------------------|------------|----------|----------|--|
| Years                    | 2014       | 2015     | 2016     |  |
| Labor                    | 203        | 0        | 0        |  |
| Non-Labor                | 40         | 0        | 0        |  |
| NSE                      | 0          | 0        | 0        |  |
| <b>Total</b>             | <b>243</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 2.0        | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00773.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00773A - PT81403 TELECOMMUNICATIONS EXPENSE MANAGEMENT  
 Workpaper Detail: 00773A.002 - TELECOMMUNICATIONS EXPENSE MANAGEMENT  
 In-Service Date: 12/31/2014  
 Description:

| Forecast In 2013 \$(000) |            |          |          |  |  |
|--------------------------|------------|----------|----------|--|--|
| Years                    | 2014       | 2015     | 2016     |  |  |
| Labor                    | 0          | 0        | 0        |  |  |
| Non-Labor                | 450        | 0        | 0        |  |  |
| NSE                      | 0          | 0        | 0        |  |  |
| <b>Total</b>             | <b>450</b> | <b>0</b> | <b>0</b> |  |  |
| FTE                      | 0.0        | 0.0      | 0.0      |  |  |

*Note: Totals may include rounding differences.*



**Beginning of Workpaper Group**  
**00776L - PT14925 Employee Care Services iVOS Claims System AON eSolutions**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776L - PT14925 Employee Care Services iVOS Claims System AON eSolutions

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |              |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|--------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016         |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 754          |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 1,000        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0            |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>0</b> | <b>1,754</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.0      | 7.3          |

**Business Purpose:**

The iVOS Claims system software is 13 years old. The product will be phased out in 3 to 5 years and vendor expects to replace it with Reveal, the new software, that is planned for release in late 2015 or 2016. It is uncertain what current functionality will be maintained in the new software.

**Physical Description:**

Replace current IVOS software, add customizations to match current functionality (i.e. paperless office and disability calculations) and update hardware as needed. Evaluate the new software and explore products by other vendors. The selected software must have an open configuration to allow the client to install or develop its own customizations. Software will be required to open system to allow for open configuration.

**Project Justification:**

Employee Care Services Department has unique processes to implement and integrated claims approach in a paperless environment. With the current system having an open configuration, Employee Care Solutions has been able to tailor its screens, tables, work flows, warning mechanisms, interfaces, reports and securities. ECS anticipates improved efficiencies with updated to technology with more flexibility for configuration

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00776.0  
Category: H. Information Technology  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00776L - PT14925 Employee Care Services iVOS Claims System AON eSolutions

**Forecast Methodology:**

**Labor - Zero-Based**

Initial cost estimates based on past experience and input from IT Supply Mgmt.

**Non-Labor - Zero-Based**

Initial cost estimates based on past experience and input from IT Supply Mgmt.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00776L**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776L - PT14925 Employee Care Services iVOS Claims System AON eSolutions  
 Workpaper Detail: 00776L.001 - The iVOS Claims system software is 13 years old. The product will be phased out in 3 t  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |          |              |  |
|--------------------------|--------------|----------|----------|--------------|--|
| Years                    |              | 2014     | 2015     | 2016         |  |
| Labor                    |              | 0        | 0        | 754          |  |
| Non-Labor                |              | 0        | 0        | 1,000        |  |
| NSE                      |              | 0        | 0        | 0            |  |
|                          | <b>Total</b> | <b>0</b> | <b>0</b> | <b>1,754</b> |  |
| FTE                      |              | 0.0      | 0.0      | 7.3          |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00776M - PT15801 GIS SAP Integration**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776M - PT15801 GIS SAP Integration

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |              |      |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|--------------|------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015         | 2016 |
| <b>Years</b>    |            |                   |          |          |          |          |                   |              |      |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 230          |      |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 1,045        |      |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0            |      |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>1,275</b> |      |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 2.3          |      |

**Business Purpose:**

Provide both SAP and GIS asset data to users in the field to improve decision making while on-site, i.e., display leaks in the path of survey for a survey crew to reduce duplication. Provide a graphical tool for analysis that integrates critical data from both systems, i.e., improve CP area planning by providing a graphical representation of the area(s) in question.

**Physical Description:**

Leak survey footage to be maintained graphically in GIS and footage measurements provided to SAP for Leak Survey. Replace manual data uploads with real-time integration reducing manual intervention and improving data quality

**Project Justification:**

Integrate SAP-PM with GIS to reduce the duplication of data and improve data integrity.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00776.0  
Category: H. Information Technology  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00776M - PT15801 GIS SAP Integration

**Forecast Methodology:**

**Labor - Zero-Based**

Based on historical assumptions

**Non-Labor - Zero-Based**

Based on historical assumptions

**NSE - Zero-Based**

N/A



**Beginning of Workpaper Sub Details for  
Workpaper Group 00776M**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776M - PT15801 GIS SAP Integration  
 Workpaper Detail: 00776M.001 - Integrate SAP PM with GIS to reduce the duplication of data and improve data integrity,  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |              |              |  |
|--------------------------|--------------|----------|--------------|--------------|--|
| Years                    |              | 2014     | 2015         | 2016         |  |
| Labor                    |              | 0        | 290          | 230          |  |
| Non-Labor                |              | 0        | 950          | 1,045        |  |
| NSE                      |              | 0        | 0            | 0            |  |
|                          | <b>Total</b> | <b>0</b> | <b>1,240</b> | <b>1,275</b> |  |
| FTE                      |              | 0.0      | 2.8          | 2.3          |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00776U - PT81448 DESIGN ENGINEERING SW Replacement**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776U - PT81448 DESIGN ENGINEERING SW Replacement

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016     |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 9                 | 3          | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 1,080             | 155        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1,089</b>      | <b>158</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.1               | 0.1        | 0.0      |

**Business Purpose:**

The implementation of this project will provide tools to aid in design and construction of pipelines both in Transmission and Distribution, regulator stations, meter set assembly's (MSA), valve control stations, storage fields, compression stations and miscellaneous engineering support drawings. This project has four main objectives:

- Comply with the Windows 7 Initiative.
- Introduce enhanced design techniques, processes, and procedures using tools that will allow automatic data capture and pipeline attribute collection to support import into the Company's GIS systems.
- Provide tools to comply with new regulations that will allow us to capture survey information, material capture, and allow ease of transfer between other supported engineering design programs, and eliminate the need to re-draft models for other purposes.
- Provide a solution to redline drawings in the field to be institutionalized

**Physical Description:**

Integrated intelligent model for design, providing automated BOM reports and automated generation of isometric piping drawings from the integrated model. Improved data integrity across drawings during typical multiple design revision cycles. Civil design using design tools. Ability to import and use GPS survey coordinate information, visualize in CAD, use together with piping design visualization software. Integrated electrical design tools providing automated generation of BOM reports. Ability to automatically create wiring connectivity reports from integrated electrical drawings. Pre-integrated with ADSK design products for management of designs and related / dependent designs. Automated PDF, DWF publishing to PDMS (and/or Sharepoint), Buzzsaw access for external collaboration. Visualization of design to better detect potential problems early during design phase.

**Project Justification:**

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00776.0  
Category: H. Information Technology  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00776U - PT81448 DESIGN ENGINEERING SW Replacement

Compliance with the following:

- Pipeline Integrity – Meet safety mandates that are defensible, supported and substantiate our infrastructure is safe.
- New regulatory requirements and compliance with new Company Gas Standards:
- As-Built Surveys for Construction of High Pressure Pipelines and Pipeline Facility (GS 167.0253)
- Map Maintenance Requirements for High Pressure Gas Lines

Provide Engineering tools to:

- Meet new Pipeline Safety mandates that include collecting and maintaining data in CAD drawing models for high pressure pipeline maintenance
- Meet daily Core Business Operations need for engineered designs of meter sets, regulator stations and high pressure facilities
- Accommodate incorporating as-built Survey information into the as-built drawing to comply with Company standards and regulatory expectations of data accessibility
- Improve workflows to efficiently produce special designs to support TIMP and DIMP
- Improve data accuracy through automated validations during the design phase
- Automate building the DDS from BOM drawings to reduce data entry errors
- Improve documentation of Welding Requirements for all transmission, high-pressure distribution PI and PSEP projects
- Resolve GIS System challenges in using/extracting information to develop design.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00776.0  
Category: H. Information Technology  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00776U - PT81448 DESIGN ENGINEERING SW Replacement

**Forecast Methodology:**

**Labor - Zero-Based**

Forecast is based on current project timeline.

**Non-Labor - Zero-Based**

Forecast is based on current project timeline.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00776U**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776U - PT81448 DESIGN ENGINEERING SW Replacement  
 Workpaper Detail: 00776U.001 - PT81448 DESIGN ENGINEERING SW Replacement  
 In-Service Date: 01/31/2015  
 Description:

| Forecast In 2013 \$(000) |              |            |            |          |  |
|--------------------------|--------------|------------|------------|----------|--|
| Years                    |              | 2014       | 2015       | 2016     |  |
| Labor                    |              | 9          | 3          | 0        |  |
| Non-Labor                |              | 810        | 155        | 0        |  |
| NSE                      |              | 0          | 0          | 0        |  |
|                          | <b>Total</b> | <b>819</b> | <b>158</b> | <b>0</b> |  |
| FTE                      |              | 0.1        | 0.1        | 0.0      |  |

*Note: Totals may include rounding differences.*



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776U - PT81448 DESIGN ENGINEERING SW Replacement  
 Workpaper Detail: 00776U.002 - DESIGN ENGINEERING SW Replacement  
 In-Service Date: 09/30/2014  
 Description:

| Forecast In 2013 \$(000) |              |            |          |          |  |
|--------------------------|--------------|------------|----------|----------|--|
| Years                    |              | 2014       | 2015     | 2016     |  |
| Labor                    |              | 0          | 0        | 0        |  |
| Non-Labor                |              | 270        | 0        | 0        |  |
| NSE                      |              | 0          | 0        | 0        |  |
|                          | <b>Total</b> | <b>270</b> | <b>0</b> | <b>0</b> |  |
| FTE                      |              | 0.0        | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00776X - PT81399 FINANCIAL ASSET MGMT (FAM)**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776X - PT81399 FINANCIAL ASSET MGMT (FAM)

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016     |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 691               | 0        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 2,488             | 0        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>3,179</b>      | <b>0</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 6.8               | 0.0      | 0.0      |

**Business Purpose:**

SEu's current financial asset management processes include manual, labor intensive, and lack the precision required by a large asset based company. As a result, there is extensive ad hoc use of distributed Excel spreadsheets and manual effort to perform tasks that are included in integrated systems. These factors limit our ability to budget, plan, and manage assets more efficiently and effectively. Most financial asset management processes currently require that large volumes of transactional data have to be downloaded from SAP, and many financial calculations are performed within spreadsheets. Then the results are entered back into SAP, which is inefficient. Automation of key planning and asset management processes will save time, allow for more analytical work instead of manual data manipulation, and will allow tax repair benefits to be obtained

A new financial asset management system will substantially reduce on-going tax expenses, greatly improve analytical abilities for managing depreciation, amortization, AFUDC, retirements, and rate base and improve compliance. The new financial asset management system will provide application modules to automate analysis, significantly reduce tax and expenses, and reduce the risk of human error in the current manual processes by providing standard functions to maximize the tax calculations in the areas of tax repair, in-service acceleration, retirement, and removal management. The new financial asset management system will improve functionality for major plant accounting processes, such as analysis of rate base, assets, CWIP, depreciation expense and studies, property and deferred tax, capital forecasting, and other supporting modules. The new financial asset management system will reduce regulatory and IRS risk by providing support and detailed analysis of depreciation, retirements, and tax repairs, and will reduce the amount of disallowances caused by inability to substantiate asset related tax deductions.

**Physical Description:**

Comply with Corporate IT and IP standards  
 Must work with existing desktop / laptop environments  
 Interfaces to SAP, GIS, budget system to asset management system, utility asset mgmt system to Corporate tax provision module  
 System configuration, if possible, will reside in client areas

**Project Justification:**

The Financial Asset Management project will dramatically improve the asset accounting lifecycle from acquisition, depreciation, repairs and maintenance, and disposal for both actual and planning processes. This project is projected to substantially reduce taxes and provide positive cash flow through configurable system functions not available in the current business processes. This project will also improve Financial Asset reporting, compliance, and cash flow forecasting.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00776.0  
Category: H. Information Technology  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00776X - PT81399 FINANCIAL ASSET MGMT (FAM)

**Forecast Methodology:**

**Labor - Zero-Based**

Project is currently in progress and based on actual project timeline and vendor quotes.

**Non-Labor - Zero-Based**

Project is currently in progress and based on actual project timeline and vendor quotes.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00776X**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776X - PT81399 FINANCIAL ASSET MGMT (FAM)  
 Workpaper Detail: 00776X.001 - PT81399 FINANCIAL ASSET MGMT (FAM)  
 In-Service Date: 12/31/2014  
 Description:

| Forecast In 2013 \$(000) |              |              |             |             |
|--------------------------|--------------|--------------|-------------|-------------|
|                          | Years        | <u>2014</u>  | <u>2015</u> | <u>2016</u> |
| Labor                    |              | 691          | 0           | 0           |
| Non-Labor                |              | 2,488        | 0           | 0           |
| NSE                      |              | 0            | 0           | 0           |
|                          | <b>Total</b> | <b>3,179</b> | <b>0</b>    | <b>0</b>    |
| FTE                      |              | 6.8          | 0.0         | 0.0         |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group  
00778A - PT14832 Share Point**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00778.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00778A - PT14832 Share Point

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |              |              |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|--------------|--------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015         | 2016         |
| <b>Years</b>    |            |                   |          |          |          |          |                   |              |              |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 332               | 1,182        | 362          |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 2,256             | 3,281        | 2,150        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0            | 0            |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>2,588</b>      | <b>4,463</b> | <b>2,512</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 3.3               | 11.6         | 3.6          |

**Business Purpose:**

\* Sempra culture is shifting towards social computing. SharePoint 2013 offers out of the box social features including micro blogging and feeds, communities, badges, reputations and more. As part of the Social Gas communication plan they are leveraging these capabilities to deliver the "Invest in our employee teams' shared work culture initiative".

\* Collaboration with parties outside of Sempra Companies is a challenge resulting in a loss of productivity. SharePoint 2013 improvements in authentication will allow for enabling extranet collaboration with vendors as well as a more seamless user experience for participating Global employees.

\* Management is seeking ways to lead the utility industry in deriving business insight from data while empower this business with increased self-service. SharePoint 2013 leverages user driven business intelligence with built-in dashboard reporting tools that offers both graphical and granular data information at managements fingertips. These include: Business connectivity services that integrates multiple databases and consolidates into a single presentation in SharePoint, SQL Reporting Services integration as well as Performance Point Services' drilldown capabilities.

An automated, efficient and effective centralized business solution is required to ensure that the Records Management (RM) Program meets all regulatory and legal compliance requirements while minimizing associated risks. This project will provide the ability to oversee and ensure compliance with the records management policy through automatically enforcing some of the policy requirements and/or flexible reporting capabilities. The scope includes unstructured electronic data (i.e. both records and non-records). This project proposes to implement a Records Management system which will leverage SharePoint, by using Microsoft Record Center, as well as another third party tool to fully meet Sempra Records Management requirements

**Physical Description:**

*Note: Totals may include rounding differences.*



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00778.0  
Category: H. Information Technology  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00778A - PT14832 Share Point

Implement new SharePoint 2013 infrastructure meeting current Computer Infrastructure standards  
Implement enterprise social computing platform including MySites, Newsfeeds, Tagging, Community Sites and People Search  
Implement new web content publishing features and convert Gaslines to SharePoint 2013  
Build new Innovation Pipeline on SharePoint 2013 platform utilizing social community template  
1) A comprehensive Enterprise RM solution which includes automate workflow, retention / disposition, file plan, e-discovery, legal-hold, auditing, monitoring, and reporting.  
2) Integration tool between Sempra RM and existing repositories  
3) Integration with RETMAN  
4) Integration with ACCUTRAC  
5) Workflows and processes to dispose and certify records  
6) Intelligent indexing and cataloging tool  
7) Migration strategy, roadmap and tools

Implement a disaster recovery environment and upgrade the DR Tier rating from 4 to 2. Reduce the SharePoint Recovery Time Objective (RTO) from >120 hours to less than 72 hours. Reduce the SharePoint Recovery Point Objective (RPO) from 48 hours to less than 24 hours.

Implement All Company Access for Global Clients with single sign-on  
Convert existing SharePoint 2010 sites (3400+) to SharePoint 2013  
Provide a SharePoint 2013 Production Environment for Records Management's "Green Initiative"

**Project Justification:**

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00778.0  
Category: H. Information Technology  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00778A - PT14832 Share Point

- 1) Improve efficiency, usability, and user productivity
  - User efficiency is increased by an intuitive user interface used throughout the Microsoft Office suite
  - SharePoint 2013 empowers users to be productive from anywhere and anytime by allowing offline content edits and synchronization
  - Quickly locate organizational expertise and skill with integrated presence and people search
- 1) Deliver Records Management solution to ensure compliance and audit capability
- 2) Automate record management process will ensure governance including improved consistency, efficiency and monitoring
- 3) Effective e-Discovery / Record Search
- 4) Protect Company brand & reputation
- 5) Leverage the growing SharePoint platform by permitting the organization to officially save records in this environment with proper RM tools
  - Improved browser support including Explorer, Chrome, Firefox and Safari
- 2) Timely information
  - Built-in Dashboard reporting tool offers both graphical and granular data information at managements fingertip
  - Similar subject documents can be associated together to easily identify corresponding actions
  - Built-in Search can find documents in their original location across the organization based upon user access permission
  - Business connectivity services integrates multiple databases and consolidates into a single presentation in SharePoint
- 3) Cost effective
  - Simple and universal user interface can ease user training and operational support reducing the total cost of ownership (TCO) for IT services
  - Different Business units security and functionality requirements can be accommodated on a single platform without impacting bottom line
  - Invest in future technology versus spending money on end of life solutions
  - Avoid costly customizations to SharePoint 2010 and necessary vendor support of customizations

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00778.0  
Category: H. Information Technology  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00778A - PT14832 Share Point

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00778A**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00778.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00778A - PT14832 Share Point  
 Workpaper Detail: 00778A.001 - SharePoint 2013  
 In-Service Date: 12/31/2015  
 Description:

| <b>Forecast In 2013 \$(000)</b> |              |              |             |  |
|---------------------------------|--------------|--------------|-------------|--|
| <b>Years</b>                    | <b>2014</b>  | <b>2015</b>  | <b>2016</b> |  |
| Labor                           | 332          | 820          | 0           |  |
| Non-Labor                       | 2,256        | 1,131        | 0           |  |
| NSE                             | 0            | 0            | 0           |  |
| <b>Total</b>                    | <b>2,588</b> | <b>1,951</b> | <b>0</b>    |  |
| FTE                             | 3.3          | 8.0          | 0.0         |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00778.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00778A - PT14832 Share Point  
 Workpaper Detail: 00778A.002 - SharePoint Records Management  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |              |              |
|--------------------------|--------------|----------|--------------|--------------|
| Years                    |              | 2014     | 2015         | 2016         |
| Labor                    |              | 0        | 362          | 362          |
| Non-Labor                |              | 0        | 2,150        | 2,150        |
| NSE                      |              | 0        | 0            | 0            |
|                          | <b>Total</b> | <b>0</b> | <b>2,512</b> | <b>2,512</b> |
| FTE                      |              | 0.0      | 3.6          | 3.6          |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00778B - PT14833 Data Loss Prevention**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00778.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00778B - PT14833 Data Loss Prevention

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016     |
| Years           |            |                   |          |          |          |          |                   |          |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 284               | 0        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 1,900             | 0        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>2,184</b>      | <b>0</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 2.8               | 0.0      | 0.0      |

**Business Purpose:**

This project will deploy discovery and prevention tools and controls for the following systems including employees copying and carrying sensitive information on a unencrypted storage device, sending sensitive information via instant messaging service, transfer of sensitive information from corporate computers to home computers or BYOD systems used at work. It will also include web email containing sensitive company information to coworkers or vendors.

**Physical Description:**

Capability implemented to discover and prevent critical information from being electronically leaked.  
 A solution will be deployed that enforces company requirements by monitoring identified sensitive data and preventing its electronic leakage from the company's network  
 A solution will be deployed to monitor communication going out to the internet from the corporate network. The solution will also discover where sensitive information resides and prevent unauthorized use of the following; file stores, home drives, SharePoint, NAS/SAN storage, desktop hard drives, personal storage devices, USB drives, USB external hard drives.

**Project Justification:**

Reduced risk of unauthorized disclosure of customer data (accidental disclosure)  
 Reduced liability from breach of sensitive customer data (malicious attack)  
 Ability to discover and report on customer and personal identifiable information (PII) on file shares, user end points and internet bound communications  
 Ability to implement automated system policies that monitor inbound / outbound traffic containing unencrypted customer and personal identifiable information (PII) to all end point devices including BYOD

*Note: Totals may include rounding differences.*



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00778.0  
Category: H. Information Technology  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00778B - PT14833 Data Loss Prevention

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00778B**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00778.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00778B - PT14833 Data Loss Prevention  
 Workpaper Detail: 00778B.001 - Data Loss Prevention  
 In-Service Date: 12/31/2014  
 Description:

| Forecast In 2013 \$(000) |            |          |          |  |
|--------------------------|------------|----------|----------|--|
| Years                    | 2014       | 2015     | 2016     |  |
| Labor                    | 284        | 0        | 0        |  |
| Non-Labor                | 225        | 0        | 0        |  |
| NSE                      | 0          | 0        | 0        |  |
| <b>Total</b>             | <b>509</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 2.8        | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00778.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00778B - PT14833 Data Loss Prevention  
 Workpaper Detail: 00778B.002 - Datal Loss Prevention  
 In-Service Date: 12/31/2014  
 Description:

| Forecast In 2013 \$(000) |            |          |          |  |
|--------------------------|------------|----------|----------|--|
| Years                    | 2014       | 2015     | 2016     |  |
| Labor                    | 0          | 0        | 0        |  |
| Non-Labor                | 195        | 0        | 0        |  |
| NSE                      | 0          | 0        | 0        |  |
| <b>Total</b>             | <b>195</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 0.0        | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00778.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00778B - PT14833 Data Loss Prevention  
 Workpaper Detail: 00778B.003 - Data Loss Prevention  
 In-Service Date: 12/31/2014  
 Description:

| <b>Forecast In 2013 \$(000)</b> |              |             |             |  |
|---------------------------------|--------------|-------------|-------------|--|
| <b>Years</b>                    | <b>2014</b>  | <b>2015</b> | <b>2016</b> |  |
| Labor                           | 0            | 0           | 0           |  |
| Non-Labor                       | 1,480        | 0           | 0           |  |
| NSE                             | 0            | 0           | 0           |  |
| <b>Total</b>                    | <b>1,480</b> | <b>0</b>    | <b>0</b>    |  |
| FTE                             | 0.0          | 0.0         | 0.0         |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00778C - PT14897 Travel and Expense Mobility**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00778.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00778C - PT14897 Travel and Expense Mobility

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |              |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|--------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015         | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |              |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 232          | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 2,150        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0            | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>2,382</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 2.3          | 0.0      |

**Business Purpose:**

Currently the submission and approval for Employee expense reimbursement can only be accomplished by using the functionality provided by the T&E (Travel & Expense) application in the SAP Portal or through the SAP GUI (Graphical User Interface). Many other companies, including Sempra unregulated businesses, have the ability to use mobile technologies to simplify and improve the accuracy of employee requests for reimbursement. This project is to purchase and deploy SAP's mobile solution for Travel and Expense along with the required foundational components.

**Physical Description:**

Evaluate, Purchase, Install, test and Deploy the Travel and Expense mobile infrastructure. This includes SAP Netweaver Gateway, Fiori and Sybase Unwired. The Smart device apps are downloaded from the SAP Mobile App Store or the Apple App Store. The project will also need to perform extensive security testing to ensure SAP is properly protected since this is the first exposure of SAP outside of our private network.

**Project Justification:**

Improve speed in submitting and approving T&E requests. Increased accuracy in T&E request submissions due to the ability to photograph and submit receipts. Fewer lost receipts. Easier tracking of charges by employees. More timely T&E submissions. Employee spends less time preparing T&E requests.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00778.0  
Category: H. Information Technology  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00778C - PT14897 Travel and Expense Mobility

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A



**Beginning of Workpaper Sub Details for  
Workpaper Group 00778C**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00778.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00778C - PT14897 Travel and Expense Mobility  
 Workpaper Detail: 00778C.001 - Currently the submission and approval for Employee espense reimbursement can only be ac  
 In-Service Date: 07/31/2015  
 Description:

| Forecast In 2013 \$(000) |              |          |              |          |  |
|--------------------------|--------------|----------|--------------|----------|--|
| Years                    |              | 2014     | 2015         | 2016     |  |
| Labor                    |              | 0        | 232          | 0        |  |
| Non-Labor                |              | 0        | 2,150        | 0        |  |
| NSE                      |              | 0        | 0            | 0        |  |
|                          | <b>Total</b> | <b>0</b> | <b>2,382</b> | <b>0</b> |  |
| FTE                      |              | 0.0      | 2.3          | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00780B - PT16888 Identity & Access Management Infrastructure Refresh**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00780.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00780B - PT16888 Identity & Access Management Infrastructure Refresh

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |              | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |              |
|-----------------|--------------|-------------------|----------|----------|----------|----------|-------------------|----------|--------------|
|                 |              | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016         |
|                 | <b>Years</b> |                   |          |          |          |          |                   |          |              |
| Labor           | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 167          |
| Non-Labor       | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 1,560        |
| NSE             | Zero-Based   | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0            |
|                 | <b>Total</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>0</b> | <b>1,727</b> |
| FTE             | Zero-Based   | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.0      | 1.6          |

**Business Purpose:**

Access Management infrastructure will be unsupported at at risk of failure impacting business users ability to access critical systems

**Physical Description:**

Replace end of life hardware and software

**Project Justification:**

Avoided costs of unplanned outages and business functionality

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00780.0  
Category: H. Information Technology  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00780B - PT16888 Identity & Access Management Infrastructure Refresh

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00780B**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00780.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00780B - PT16888 Identity & Access Management Infrastructure Refresh  
 Workpaper Detail: 00780B.001 - Access Management infrastructure will be unsupported at at risk of failure impacting bu  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |          |          |              |  |
|--------------------------|----------|----------|--------------|--|
| Years                    | 2014     | 2015     | 2016         |  |
| Labor                    | 0        | 0        | 167          |  |
| Non-Labor                | 0        | 0        | 1,560        |  |
| NSE                      | 0        | 0        | 0            |  |
| <b>Total</b>             | <b>0</b> | <b>0</b> | <b>1,727</b> |  |
| FTE                      | 0.0      | 0.0      | 1.6          |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00788A - PT14805 - Enterprise BI Analytics and Dashboards - 2014**



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00788.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00788A - PT14805 - Enterprise BI Analytics and Dashboards - 2014

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016     |
| Years           |            |                   |          |          |          |          |                   |            |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 41                | 61         | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 278               | 390        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>319</b>        | <b>451</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.4               | 0.6        | 0.0      |

**Business Purpose:**

As SEU's business needs change, new/updated KPI's and metrics are needed to enable clients to keep up with these changes. In addition, as the amount of information continues to grow, clients require new and improved capabilities to access, visualize, query and report off this data. Clients are increasingly asking for more and more self-service capabilities for their analytical needs - this is consistent with trends at Sempra and within the industry

**Physical Description:**

Implement a new ad-hoc reporting and BI self-service environment to allow users to create and develop reports using enterprise standard software, hardware and data warehouses. In addition, implement new functionality and datamarts for existing clients like Accounting & Finance, DBE, Safety, Electric T&D, Gas Distribution Ops, HR and SoCal Gas Executives.

**Project Justification:**

Minimize the number of IT-funded projects (capital or O&M) required to develop and deploy analytics to clients. Provide clients with an environment to develop their own queries and reports, thereby minimizing their dependencies on IT.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00788.0  
Category: H. Information Technology  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00788A - PT14805 - Enterprise BI Analytics and Dashboards - 2014

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00788A**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00788.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00788A - PT14805 - Enterprise BI Analytics and Dashboards - 2014  
 Workpaper Detail: 00788A.001 - As SEU s business needs change new/updated KPI s and metrics are needed to enable clie  
 In-Service Date: 06/30/2015  
 Description:

| Forecast In 2013 \$(000) |            |            |          |  |
|--------------------------|------------|------------|----------|--|
| Years                    | 2014       | 2015       | 2016     |  |
| Labor                    | 41         | 61         | 0        |  |
| Non-Labor                | 278        | 390        | 0        |  |
| NSE                      | 0          | 0          | 0        |  |
| <b>Total</b>             | <b>319</b> | <b>451</b> | <b>0</b> |  |
| FTE                      | 0.4        | 0.6        | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00788B - PT15806 Enterprise BI Analytics and Dashboards - 2015**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00788.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00788B - PT15806 Enterprise BI Analytics and Dashboards - 2015

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |            |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016       |
| <b>Years</b>    |            |                   |          |          |          |          |                   |          |            |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 97         |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 672        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0          |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>0</b> | <b>769</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.0      | 1.0        |

**Business Purpose:**

As SEU's business needs change, new/updated KPI's and metrics are needed to enable clients to keep up with these changes. In addition, as the amount of information continues to grow, clients require new and improved capabilities to access, visualize, query and report off this data. Clients are increasingly asking for more and more self-service capabilities for their analytical needs - this is consistent with trends at Sempra and within the industry

**Physical Description:**

Implement a new ad-hoc reporting and BI self-service environment to allow users to create and develop reports using enterprise standard software, hardware and data warehouses. In addition, implement new functionality and datamarts for existing clients like Accounting & Finance, DBE, Safety, Electric T&D, Gas Distribution Ops, HR and SoCal Gas Executives.

**Project Justification:**

Minimize the number of IT-funded projects (capital or O&M) required to develop and deploy analytics to clients. Provide clients with an environment to develop their own queries and reports, thereby minimizing their dependencies on IT.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00788.0  
Category: H. Information Technology  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00788B - PT15806 Enterprise BI Analytics and Dashboards - 2015

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00788B**



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00788.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00788B - PT15806 Enterprise BI Analytics and Dashboards - 2015  
 Workpaper Detail: 00788B.001 - As SEU s business needs change new/updated KPI s and metrics are needed to enable clie  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |          |            |  |
|--------------------------|--------------|----------|----------|------------|--|
| Years                    |              | 2014     | 2015     | 2016       |  |
| Labor                    |              | 0        | 0        | 97         |  |
| Non-Labor                |              | 0        | 0        | 672        |  |
| NSE                      |              | 0        | 0        | 0          |  |
|                          | <b>Total</b> | <b>0</b> | <b>0</b> | <b>769</b> |  |
| FTE                      |              | 0.0      | 0.0      | 1.0        |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00788D - PT16816 Enterprise Analytics System (EAS) Phase III**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00788.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00788D - PT16816 Enterprise Analytics System (EAS) Phase III

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |      |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016 |
| <b>Years</b>    |            |                   |          |          |          |          |                   |            |      |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 70         |      |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 400        |      |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          |      |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>470</b> |      |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.7        |      |

**Business Purpose:**

Continued build out of the EAS platform as defined by the EAS Roadmap that was developed in 2013. This project will build out the platform to support additional analytics and dashboarding that is needed by the business, including SDG&E, SoCal Gas and Corporate Center.

**Physical Description:**

Implement new data sources and refactor existing data sources, as identified in the EAS Roadmap. Deploy hardware and software to extend the analytics platform(s), for continued analytics and self service. Included in scope is the process of improving data quality for the newly added data sources. Build out could include migration to new open source platforms and integration tools.

**Project Justification:**

Minimize the number of siloed analytics deployments that potentially result in point solutions. Move toward an "On Demand" analytics platform for faster, better, easier deployment of analytics across the enterprise.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00788.0  
Category: H. Information Technology  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00788D - PT16816 Enterprise Analytics System (EAS) Phase III

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00788D**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00788.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00788D - PT16816 Enterprise Analytics System (EAS) Phase III  
 Workpaper Detail: 00788D.001 - Continued build out of the EAS platform as defined by the EAS Roadmap that was developed  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |          |          |            |  |
|--------------------------|----------|----------|------------|--|
| Years                    | 2014     | 2015     | 2016       |  |
| Labor                    | 0        | 0        | 70         |  |
| Non-Labor                | 0        | 0        | 400        |  |
| NSE                      | 0        | 0        | 0          |  |
| <b>Total</b>             | <b>0</b> | <b>0</b> | <b>470</b> |  |
| FTE                      | 0.0      | 0.0      | 0.7        |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00788E - PT16927 Enterprise BI Analytics and Dashboards**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00788.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00788E - PT16927 Enterprise BI Analytics and Dashboards

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |            |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016       |
| Years           |            |                   |          |          |          |          |                   |          |            |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 97         |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 672        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0          |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>0</b> | <b>769</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 0.0      | 1.0        |

**Business Purpose:**

As SEU's business needs change, new/updated KPI's and metrics are needed to enable clients to keep up with these changes. In addition, as the amount of information continues to grow, clients require new and improved capabilities to access, visualize, query and report off this data. Clients are increasingly asking for more and more self-service capabilities for their analytical needs - this is consistent with trends at Sempra and within the industry

**Physical Description:**

Implement a new ad-hoc reporting and BI self-service environment to allow users to create and develop reports using enterprise standard software, hardware and data warehouses. In addition, implement new functionality and datamarts for existing clients like Accounting & Finance, DBE, Safety, Electric T&D, Gas Distribution Ops, HR and SoCal Gas Executives.

**Project Justification:**

Minimize the number of IT-funded projects (capital or O&M) required to develop and deploy analytics to clients. Provide clients with an environment to develop their own queries and reports, thereby minimizing their dependencies on IT.

*Note: Totals may include rounding differences.*



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00788.0  
Category: H. Information Technology  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00788E - PT16927 Enterprise BI Analytics and Dashboards

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00788E**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00788.0  
 Category: H. Information Technology  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00788E - PT16927 Enterprise BI Analytics and Dashboards  
 Workpaper Detail: 00788E.001 - As SEU's business needs change, new/updated KPI's and metrics are needed to enable clie  
 In-Service Date: 12/31/2016  
 Description:

| Forecast In 2013 \$(000) |              |          |          |            |  |
|--------------------------|--------------|----------|----------|------------|--|
| Years                    |              | 2014     | 2015     | 2016       |  |
| Labor                    |              | 0        | 0        | 97         |  |
| Non-Labor                |              | 0        | 0        | 672        |  |
| NSE                      |              | 0        | 0        | 0          |  |
|                          | <b>Total</b> | <b>0</b> | <b>0</b> | <b>769</b> |  |
| FTE                      |              | 0.0      | 0.0      | 1.0        |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Category: J. Supply Management  
Workpaper: VARIOUS

**Summary for Category: J. Supply Management**

|              | In 2013\$ (000)   |                   |              |            |
|--------------|-------------------|-------------------|--------------|------------|
|              | Adjusted-Recorded | Adjusted-Forecast |              |            |
|              | 2013              | 2014              | 2015         | 2016       |
| Labor        | 0                 | 884               | 1,301        | 254        |
| Non-Labor    | 0                 | 2,840             | 1,192        | 15         |
| NSE          | 0                 | 0                 | 0            | 0          |
| <b>Total</b> | <b>0</b>          | <b>3,724</b>      | <b>2,493</b> | <b>269</b> |
| FTE          | 0.0               | 8.7               | 12.7         | 2.5        |

**00776S PT81353 ECM REPLACEMENT**

|              |          |            |          |          |
|--------------|----------|------------|----------|----------|
| Labor        | 0        | 104        | 0        | 0        |
| Non-Labor    | 0        | 463        | 0        | 0        |
| NSE          | 0        | 0          | 0        | 0        |
| <b>Total</b> | <b>0</b> | <b>567</b> | <b>0</b> | <b>0</b> |
| FTE          | 0.0      | 1.0        | 0.0      | 0.0      |

**00766B PT14873 SAP Logistics Mobility Refresh**

|              |          |              |           |          |
|--------------|----------|--------------|-----------|----------|
| Labor        | 0        | 203          | 45        | 0        |
| Non-Labor    | 0        | 1,251        | 44        | 0        |
| NSE          | 0        | 0            | 0         | 0        |
| <b>Total</b> | <b>0</b> | <b>1,454</b> | <b>89</b> | <b>0</b> |
| FTE          | 0.0      | 2.0          | 0.4       | 0.0      |

**00776C PT14876 Shop Tracking System**

|              |          |            |            |            |
|--------------|----------|------------|------------|------------|
| Labor        | 0        | 352        | 509        | 254        |
| Non-Labor    | 0        | 352        | 276        | 15         |
| NSE          | 0        | 0          | 0          | 0          |
| <b>Total</b> | <b>0</b> | <b>704</b> | <b>785</b> | <b>269</b> |
| FTE          | 0.0      | 3.5        | 5.0        | 2.5        |

**00778D PT15926 SAP Enterprise Mobility**

|              |          |          |            |          |
|--------------|----------|----------|------------|----------|
| Labor        | 0        | 0        | 348        | 0        |
| Non-Labor    | 0        | 0        | 500        | 0        |
| NSE          | 0        | 0        | 0          | 0        |
| <b>Total</b> | <b>0</b> | <b>0</b> | <b>848</b> | <b>0</b> |
| FTE          | 0.0      | 0.0      | 3.4        | 0.0      |

**00778E PT81407 E-PROCUREMENT IMPLEMENTATION**

|              |          |            |            |          |
|--------------|----------|------------|------------|----------|
| Labor        | 0        | 225        | 399        | 0        |
| Non-Labor    | 0        | 774        | 372        | 0        |
| NSE          | 0        | 0          | 0          | 0        |
| <b>Total</b> | <b>0</b> | <b>999</b> | <b>771</b> | <b>0</b> |
| FTE          | 0.0      | 2.2        | 3.9        | 0.0      |

Note: Totals may include rounding differences.

**Beginning of Workpaper Group**  
**00776S - PT81353 ECM REPLACEMENT**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: J. Supply Management  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00776S - PT81353 ECM REPLACEMENT

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |          |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|----------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015     | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |          |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 104               | 0        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 463               | 0        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0        | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>567</b>        | <b>0</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 1.0               | 0.0      | 0.0      |

**Business Purpose:**

Proceed with purchase and implementation of Emptoris solution: Enterprise Contract Management, Sourcing, Supplier Qualification, and Suite Reporting.

**Physical Description:**

Replace ECM Contract Management system and Power Advocate eSourcing system.  
 Maintain enterprise-wide contract management system capability required for maintaining financial and risk management business (SOX 404) controls

**Project Justification:**

Replace existing Enterprise Contract Management (ECM) system and Power Advocate eSourcing system with Emptoris product suite. The ECM application was purchased from Nextance and installed in 2005. Approximately five years ago Nextance was sold to Versata. Shortly thereafter, all legacy engineering and technical resources were terminated and product support has become more and more difficult to obtain. In October, 2010 we were informed by Versata management that our 5.1 product would be "sunsetting" in 2011

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00776.0  
Category: J. Supply Management  
Category-Sub: 1. Technical Obsolescence  
Workpaper Group: 00776S - PT81353 ECM REPLACEMENT

**Forecast Methodology:**

**Labor - Zero-Based**

Project was completed Q2 of 2014.

**Non-Labor - Zero-Based**

Project was completed Q2 of 2014.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00776S**



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: J. Supply Management  
 Category-Sub: 1. Technical Obsolescence  
 Workpaper Group: 00776S - PT81353 ECM REPLACEMENT  
 Workpaper Detail: 00776S.001 - ECM REPLACEMENT  
 In-Service Date: 02/28/2014  
 Description:

| Forecast In 2013 \$(000) |              |            |          |          |  |
|--------------------------|--------------|------------|----------|----------|--|
| Years                    |              | 2014       | 2015     | 2016     |  |
| Labor                    |              | 104        | 0        | 0        |  |
| Non-Labor                |              | 463        | 0        | 0        |  |
| NSE                      |              | 0          | 0        | 0        |  |
|                          | <b>Total</b> | <b>567</b> | <b>0</b> | <b>0</b> |  |
| FTE                      |              | 1.0        | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00766B - PT14873 SAP Logistics Mobility Refresh**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00766.0  
 Category: J. Supply Management  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00766B - PT14873 SAP Logistics Mobility Refresh

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |           |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|-----------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015      | 2016     |
| Years           |            |                   |          |          |          |          |                   |           |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 203               | 45        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 1,251             | 44        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0         | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1,454</b>      | <b>89</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 2.0               | 0.4       | 0.0      |

**Business Purpose:**

The Inventory Management operation within Supply Management at SEU uses a mobile application and mobile scanning devices to enter most transactions into SAP. The scanning devices are at end of life , fully depreciated, and are rapidly beginning to fail and must be replaced. The Mobile application named Catamaran is obsolete and does not support newer scanner technology.

**Physical Description:**

Replace the 200 motorola model 9090 barcode mobile scanners at SCG and SDGE with the next generation device and replace the 20 barcode printers. Replace the Catamaran mobile application with the SAP Mobility platform used for T&E reimbursements.

**Project Justification:**

Provide a secure easy to use mobile platform for most inventory management transactions. Leverages existing SAP Platform and maintenance expense. Retires the Catamaran application and related yearly maintenance expense. Broadens support bench strength to any ABAP developer, currently 1 dedicated developer resource.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00766.0  
Category: J. Supply Management  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00766B - PT14873 SAP Logistics Mobility Refresh

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00766B**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00766.0  
 Category: J. Supply Management  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00766B - PT14873 SAP Logistics Mobility Refresh  
 Workpaper Detail: 00766B.001 - SAP Logistics  
 In-Service Date: 03/31/2015  
 Description:

| Forecast In 2013 \$(000) |            |          |          |  |
|--------------------------|------------|----------|----------|--|
| Years                    | 2014       | 2015     | 2016     |  |
| Labor                    | 0          | 0        | 0        |  |
| Non-Labor                | 851        | 0        | 0        |  |
| NSE                      | 0          | 0        | 0        |  |
| <b>Total</b>             | <b>851</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 0.0        | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00766.0  
 Category: J. Supply Management  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00766B - PT14873 SAP Logistics Mobility Refresh  
 Workpaper Detail: 00766B.002 - SAP logistics  
 In-Service Date: 03/31/2015  
 Description:

| Forecast In 2013 \$(000) |            |           |          |  |
|--------------------------|------------|-----------|----------|--|
| Years                    | 2014       | 2015      | 2016     |  |
| Labor                    | 203        | 45        | 0        |  |
| Non-Labor                | 400        | 44        | 0        |  |
| NSE                      | 0          | 0         | 0        |  |
| <b>Total</b>             | <b>603</b> | <b>89</b> | <b>0</b> |  |
| FTE                      | 2.0        | 0.4       | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00776C - PT14876 Shop Tracking System**



Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: J. Supply Management  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776C - PT14876 Shop Tracking System

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |            |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|------------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016       |
| <b>Years</b>    |            |                   |          |          |          |          |                   |            |            |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 352               | 509        | 254        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 352               | 276        | 15         |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0          |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>704</b>        | <b>785</b> | <b>269</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 3.5               | 5.0        | 2.5        |

**Business Purpose:**

Implementation of a tool and instrumentation device tracking system that can be used by both SoCalGas and SDG&E for the purpose of managing tools, instruments, and safety equipment that are used by the field crews along with providing up-to-date statuses. This solution will leverage existing technologies and apply standardized business processes. The main objectives of this project are based on safety, compliance and efficiency improvements. Tools considered to be in scope are those that: can be individually identified by means of a barcode label and are assigned to an unique base location or an individual and needs to be tracked for safety or regulatory compliance reasons, or falls under a testing/calibration/repair/ warranty cycle

**Physical Description:**

All tool data records will be created and stored in SAP IM, QM, and PM.  
 Deploy mobile data collection solution to label, track, monitor movement and view inventory across the enterprise.  
 Maintenance plans set up in SAP to manage preventive maintenance, inspections, calibration and testing. Recorded results will be stored within SAP.  
 A single system will track status, location and repair history.  
 Provide ability to monitor tool assignments on individual, crew or district level and maintain history as well as to perform requisition and reservation.  
 RFID/Barcode/data enter receipt to inventory; Individual records created per master profile.

**Project Justification:**

Mitigates Business disruption risk: SCG & SDGE systems are 20 + years old and are no longer supported.  
 Warranties are not effectively utilized. Tools sent to outside vendors for maintenance currently are not adequately/effectively tracked.  
 Improved tool utilization, streamline loss prevention processes and reduce repair times will reduce overall tool costs.  
 Reduction of paper driven processes and elimination of obsolete applications will reduce process and IT costs. Bar coding will improve data entry ease and accuracy and provide a more effective method for identifying the tools.  
 Improved tracking of maintenance schedules, periodic inspections, and calibrations will extend tool life. And will help meet Sempra's commitment to health & safety and compliance.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00776.0  
Category: J. Supply Management  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00776C - PT14876 Shop Tracking System

**Forecast Methodology:**

**Labor - Zero-Based**

Based on internal labor hours estimates

**Non-Labor - Zero-Based**

Based in vendor estimates

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00776C**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: J. Supply Management  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776C - PT14876 Shop Tracking System  
 Workpaper Detail: 00776C.001 - Tool and Instrumentation Tracking  
 In-Service Date: 07/31/2016  
 Description:

| <b>Forecast In 2013 \$(000)</b> |             |             |             |  |
|---------------------------------|-------------|-------------|-------------|--|
| <b>Years</b>                    | <b>2014</b> | <b>2015</b> | <b>2016</b> |  |
| Labor                           | 352         | 509         | 254         |  |
| Non-Labor                       | 254         | 276         | 15          |  |
| NSE                             | 0           | 0           | 0           |  |
| <b>Total</b>                    | <b>606</b>  | <b>785</b>  | <b>269</b>  |  |
| FTE                             | 3.5         | 5.0         | 2.5         |  |

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00776.0  
 Category: J. Supply Management  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00776C - PT14876 Shop Tracking System  
 Workpaper Detail: 00776C.002 - Shop Tracking System  
 In-Service Date: 07/31/2014  
 Description:

| Forecast In 2013 \$(000) |           |          |          |  |
|--------------------------|-----------|----------|----------|--|
| Years                    | 2014      | 2015     | 2016     |  |
| Labor                    | 0         | 0        | 0        |  |
| Non-Labor                | 98        | 0        | 0        |  |
| NSE                      | 0         | 0        | 0        |  |
| <b>Total</b>             | <b>98</b> | <b>0</b> | <b>0</b> |  |
| FTE                      | 0.0       | 0.0      | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00778D - PT15926 SAP Enterprise Mobility**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00778.0  
 Category: J. Supply Management  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00778D - PT15926 SAP Enterprise Mobility

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016     |
| <b>Years</b>    |            |                   |          |          |          |          |                   |            |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 348        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 500        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>848</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 0.0               | 3.4        | 0.0      |

**Business Purpose:**

Currently the submission and approval for SRM Shopping Carts, Purchase Requisitions, SAP Security Requests (GRC), and SAP Change Management Requests (CHARM) can only be accomplished by using the functionality provided by the SAP Desktop. This project is to purchase and deploy SAP's mobile solutions and leverage the SMP SAP Mobile Platform

**Physical Description:**

Evaluate, Purchase, Install, test and Deploy mobile approvals for: the SRM Shopping Carts, SAP Purchase Requisitions, SAP Security Requests (GRC), and SAP Change Management Requests (CHARM).

**Project Justification:**

Improve speed in submitting and approving SAP requests. Mobile apps will provide the ability to view requests via a mobile smart device and quickly approve or reject the request.

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00778.0  
Category: J. Supply Management  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00778D - PT15926 SAP Enterprise Mobility

**Forecast Methodology:**

**Labor - Zero-Based**

Estimate based on internal labor hours quotations

**Non-Labor - Zero-Based**

Estimate based on vendor quotations

**NSE - Zero-Based**

N/A



**Beginning of Workpaper Sub Details for  
Workpaper Group 00778D**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00778.0  
 Category: J. Supply Management  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00778D - PT15926 SAP Enterprise Mobility  
 Workpaper Detail: 00778D.001 - Currently the submission and approval for SRM Shopping Carts, Purchase Requisitions, SA  
 In-Service Date: 07/31/2015  
 Description:

| Forecast In 2013 \$(000) |              |          |            |          |  |
|--------------------------|--------------|----------|------------|----------|--|
| Years                    |              | 2014     | 2015       | 2016     |  |
| Labor                    |              | 0        | 348        | 0        |  |
| Non-Labor                |              | 0        | 500        | 0        |  |
| NSE                      |              | 0        | 0          | 0        |  |
|                          | <b>Total</b> | <b>0</b> | <b>848</b> | <b>0</b> |  |
| FTE                      |              | 0.0      | 3.4        | 0.0      |  |

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00778E - PT81407 E-PROCUREMENT IMPLEMENTATION**

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00778.0  
 Category: J. Supply Management  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00778E - PT81407 E-PROCUREMENT IMPLEMENTATION

**Summary of Results (Constant 2013 \$ in 000s):**

| Forecast Method |            | Adjusted Recorded |          |          |          |          | Adjusted Forecast |            |          |
|-----------------|------------|-------------------|----------|----------|----------|----------|-------------------|------------|----------|
|                 |            | 2009              | 2010     | 2011     | 2012     | 2013     | 2014              | 2015       | 2016     |
| Years           |            |                   |          |          |          |          |                   |            |          |
| Labor           | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 225               | 399        | 0        |
| Non-Labor       | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 774               | 372        | 0        |
| NSE             | Zero-Based | 0                 | 0        | 0        | 0        | 0        | 0                 | 0          | 0        |
| <b>Total</b>    |            | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>999</b>        | <b>771</b> | <b>0</b> |
| FTE             | Zero-Based | 0.0               | 0.0      | 0.0      | 0.0      | 0.0      | 2.2               | 3.9        | 0.0      |

**Business Purpose:**

Objective of this project is to implement SAP E-Procurement 7.0 solution as the single integrated e-Procurement platform across the company for most types of orders such as order from external supplier catalogs, internally maintained catalogs with stock and non-stock items, special requests and unplanned services. This Self-Service tool will strengthen and streamline our current procurement process by consolidating most purchases in one system, a system with electronic workflow order approval capability is tightly integrated to our SAP ERP system.

E-Procurement implementation includes deployment of MDM (Master Data Management) Procurement Catalog, an internal online catalog that provides content management, robust user interface and powerful search engine that is integrated to the ordering process within E-Procurement.

E-Procurement implementation also includes a Supplier Collaboration tool known as SUS (Supplier Self-Service). This hosted web-based supplier portal automates order collaboration with real-time exchange of business documents (PO, confirmations or service entry sheets and Invoices) between our company and supplier.

**Physical Description:**

Objective of this project is to implement SAP E-Procurement 7.0 solution as the single integrated e-Procurement platform across the company for most types of orders such as order from external supplier catalogs, internally maintained catalogs with stock and non-stock items, special requests and unplanned services. This Self-Service tool will strengthen and streamline our current procurement process by consolidating most purchases in one system, a system with electronic workflow order approval capability is tightly integrated to our SAP ERP system.

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E-Procurement implementation also includes a Supplier Collaboration tool known as SUS (Supplier Self-Service). This hosted web-based supplier portal automates order collaboration with real-time exchange of business documents (PO, confirmations or service entry sheets and Invoices) between our company and supplier.

**Project Justification:**

*Note: Totals may include rounding differences.*

Southern California Gas Company  
2016 GRC - APP  
Capital Workpapers

Area: INFORMATION TECHNOLOGY  
Witness: Christopher R. Olmsted  
Budget Code: 00778.0  
Category: J. Supply Management  
Category-Sub: 4. Business Optimization  
Workpaper Group: 00778E - PT81407 E-PROCUREMENT IMPLEMENTATION

The current SupplyNet application has served us well but needs to be replaced as it is not upgradeable at this point. SupplyNet also lacks a real-time integration with SAP to create follow-on purchasing documents such as PO and Goods Receipt. Not only will E-Procurement provide a more simplified production support model but it provides additional functionalities and it has standard integration to our current SAP version SAP ECC.

SCG requestors currently use catalogs in PDF format to manually search for items and then manually note down these items so they can then create order in SAP ECC. There is an obvious need for an online system to centrally maintain, access and order from web-based catalogs that will then automatically create orders directly in SAP ECC.

We are already licensed with SAP E-Procurement solution which is part of the SAP Limited Enterprise Licensing agreement and is included in our SAP maintenance agreement.

*Note: Totals may include rounding differences.*

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Workpaper Group: 00778E - PT81407 E-PROCUREMENT IMPLEMENTATION

**Forecast Methodology:**

**Labor - Zero-Based**

The forecast is based upon the current project timeline.

**Non-Labor - Zero-Based**

The forecast is based upon the current project timeline.

**NSE - Zero-Based**

N/A

**Beginning of Workpaper Sub Details for  
Workpaper Group 00778E**

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 Budget Code: 00778.0  
 Category: J. Supply Management  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00778E - PT81407 E-PROCUREMENT IMPLEMENTATION  
 Workpaper Detail: 00778E.001 - E-PROCUREMENT IMPLEMENTATION  
 In-Service Date: 09/30/2015  
 Description:

| Forecast In 2013 \$(000) |            |            |          |  |
|--------------------------|------------|------------|----------|--|
| Years                    | 2014       | 2015       | 2016     |  |
| Labor                    | 225        | 399        | 0        |  |
| Non-Labor                | 694        | 152        | 0        |  |
| NSE                      | 0          | 0          | 0        |  |
| <b>Total</b>             | <b>919</b> | <b>551</b> | <b>0</b> |  |
| FTE                      | 2.2        | 3.9        | 0.0      |  |

*Note: Totals may include rounding differences.*



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 Budget Code: 00778.0  
 Category: J. Supply Management  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00778E - PT81407 E-PROCUREMENT IMPLEMENTATION  
 Workpaper Detail: 00778E.002 - E-PROCUREMENT IMPLEMENTATION  
 In-Service Date: 09/30/2015  
 Description:

| Forecast In 2013 \$(000) |           |           |          |  |
|--------------------------|-----------|-----------|----------|--|
| Years                    | 2014      | 2015      | 2016     |  |
| Labor                    | 0         | 0         | 0        |  |
| Non-Labor                | 80        | 20        | 0        |  |
| NSE                      | 0         | 0         | 0        |  |
| <b>Total</b>             | <b>80</b> | <b>20</b> | <b>0</b> |  |
| FTE                      | 0.0       | 0.0       | 0.0      |  |

*Note: Totals may include rounding differences.*

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Capital Workpapers

Area: INFORMATION TECHNOLOGY  
 Witness: Christopher R. Olmsted  
 Budget Code: 00778.0  
 Category: J. Supply Management  
 Category-Sub: 4. Business Optimization  
 Workpaper Group: 00778E - PT81407 E-PROCUREMENT IMPLEMENTATION  
 Workpaper Detail: 00778E.003 - E-PROCUREMENT IMPLEMENTATION  
 In-Service Date: 09/30/2015  
 Description:

| Forecast In 2013 \$(000) |          |            |          |  |
|--------------------------|----------|------------|----------|--|
| Years                    | 2014     | 2015       | 2016     |  |
| Labor                    | 0        | 0          | 0        |  |
| Non-Labor                | 0        | 200        | 0        |  |
| NSE                      | 0        | 0          | 0        |  |
| <b>Total</b>             | <b>0</b> | <b>200</b> | <b>0</b> |  |
| FTE                      | 0.0      | 0.0        | 0.0      |  |

*Note: Totals may include rounding differences.*