

Application of San Diego Gas & Electric Company (U902M) for authority to update its gas and electric revenue requirement and base rates effective on January 1, 2012.

A.10-12-005

Application of Southern California Gas Company for authority to update its gas revenue requirement and base rates effective on January 1, 2012. (U904G)

A.10-12-006

Exhibit No.: (SCG-14-CWP-R)

REVISED CAPITAL WORKPAPERS TO
PREPARED DIRECT TESTIMONY
OF JAMES C. SEIFERT
ON BEHALF OF SOUTHERN CALIFORNIA GAS COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

JULY 2011



CAPITAL PROJECT WORKPAPER

PROJECT TITLE Common Plant Blanket - Infrastructure Improvements SCG	BUDGET NO. 00653.0
WITNESS David Taylor	IN SERVICE DATE Blanket

PROJECT COST (\$000 in 2009\$)	PRIOR YEARS	2009	2010	2011	2012	REMAINING YEARS	TOTAL
DIRECT LABOR	0	0	73	58	87	0	218
DIRECT NONLABOR	0	9154	4700	5942	5913	0	25709
TOTAL DIRECT CAPITAL	0	9154	4773	6000	6000	0	25927
COLLECTIBLE							
NET CAPITAL	0	9154	4773	6000	6000	0	25927
FTE	0	0	.80	.60	.90	0	2.30

Business Purpose

This budget funds numerous building modifications, upgrades, and facility improvements to adequately support corporate business initiatives, to extend the life of the asset, or increase the functionality of a building or site. Small projects under \$1M are bundled when possible for economies of scale in sourcing. These projects vary year to year based on need, but address replacement of basic building systems and infrastructure. Each year requirements are prioritized to manage the facility assets, keep the employees safe and optimize real estate value. Scopes of work may include modernization projects, improvements to implement best practices, and/or offer best alternatives for cost avoidance compared to other scenarios.

Physical Description

Types of work included in this blanket are boilers, water heaters, carpet, chillers, cooling towers, doors, energy management systems, energy conservation projects, fences, flooring, gates, generators, hoists, HVAC, lighting, roofs, awnings, security systems, stormwater mitigation and other general tenant improvements.

Project Justification

Facilities Operations and the business units identify requirements based on criticality of the facility, the age of the asset, and the implications for failure to complete the replacement or modification. Failure to implement these projects could translate into reduced safety, disruption to the business unit, inability to meet business unit operational needs, higher costs to maintain and repair, and asset devaluation.

Projects are planned according to the availability of resources, in some cases weather, lead times and priorities. Like projects are bundled for economies of scale for better pricing in sourcing. Construction calculations are supported by industry professionals, including licensed architects and designers, construction industry professionals, and IT domain experts using standard construction estimation practices.

Forecast Methodology

Estimated blanket budget is based upon historical spending and future forecast necessary to meet the company compliance and service level agreement.

CAPITAL PROJECT WORKPAPER

PROJECT TITLE Common Plant Blanket - Infrastructure Improvements SCG	BUDGET NO. 00653.0
WITNESS David Taylor	IN SERVICE DATE Blanket

Schedule

This is a blanket budget. Schedules for each project are set based on resources and independent project schedules constraints, with schedules designed to complete or have a phase completed, generally within (6) months.

Note

The 2009 Actual included a total of \$3.7M big ticket projects as follows: Compton Sewer Line-\$1.2M; MPK Bldg C Air Handler-\$700K; Simi Valley Hoist-\$400K; Redlands HQ Redundant UPS-\$600K; MPK DC Cooling Tower-\$800K.

CAPITAL PROJECT WORKPAPER

PROJECT TITLE Downey ERC Chiller Replacement (LEED)	BUDGET NO. 00653.0
WITNESS David Taylor	IN SERVICE DATE 06/30/2012

PROJECT COST (\$000 in 2009\$)	PRIOR YEARS	2009	2010	2011	2012	REMAINING YEARS	TOTAL
DIRECT LABOR	0	0	43	29	43	0	115
DIRECT NONLABOR	0	0	1803	2107	1957	0	5867
TOTAL DIRECT CAPITAL	0	0	1846	2136	2000	0	5982
COLLECTIBLE							
NET CAPITAL	0	0	1846	2136	2000	0	5982
FTE	0	0	.50	.30	.50	0	1.30

Business Purpose

The ERC will improve the efficient use and conservation of energy and water resources by developing a complete design for the replacement of the existing Heating, Ventilation, and Air Conditioning (HVAC) system and related piping. The existing system is identified as non-functional, under-performing or nearing the end of the useful life cycle. Due diligence in the assessment of the use and maintenance requirements of the existing system caused the team to develop a design that will result in innovation and a sustainable approach while demonstrating commercial viability that improves lifecycle costs and end user benefits. System performance and energy efficiency will be supported by a newly designed and installed Building Management System (BMS).

As part of the assessment the project team developed a five (5) year master plan with the first and second phase to be performed and completed by December 2011

A key element in our decision to remain with gas-fired chillers, we collaborated with Steve Rawski, an engineer within the C/I department at So Cal Gas, to conduct an accurate cost-benefit measurement and analysis of electric v. gas-fired chillers.

Physical Description

The goal for an HVAC system is to provide proper air flow, heating, and cooling to each room. The project team will contract directly with an Engineering Firm, which will verify record drawings and existing conditions; prepare fully developed construction documents (drawings and specifications); construction phasing (scheduling) timeline; cost estimates; and provide construction period services. The total completed design shall include all necessary features and items of work required so that the general contractor shall have a complete buildable and functional system complying with the latest requirements under California Building Standard Commission Requirements, California Business Code, California Electric Code, California Mechanical Code, California Plumbing code, Title 24 and United States Green Building Counsel. The design effort will include mechanical, electrical, architectural, plumbing and structural disciplines. The new HVAC system shall be Energy Star rated with variable air volume capability to achieve optimal energy efficiency.

CAPITAL PROJECT WORKPAPER

PROJECT TITLE Downey ERC Chiller Replacement (LEED)	BUDGET NO. 00653.0
WITNESS David Taylor	IN SERVICE DATE 06/30/2012

Project Justification

SoCalGas, through its energy efficiency program administration responsibilities, is seen as a leader in California's EE efforts. The showcase of these efforts is the Company's ERC which promotes energy efficiency and green building technologies. The ERC build out was performed in 1996 as an expansion of the SCG base originally constructed in 1957. The building is currently served by a variety of HVAC system components. Due diligence in the assessment of the existing mechanical system, lighting and building management system resulted in the development of a five-year master plan with the first phase engineering design and permitting to be performed and completed in 2010. There is an existing chilled water plant consisting of three (3) 30-ton gas fired absorption chillers. Of these three, two (2) chillers are not operating properly and are in need of immediate replacement. The installation of the mechanical equipment and related piping will be scheduled through December 31, 2011. The first phase of the project will begin with the engineering, design, permitting and construction of an expanded chilled water system and the redesign of the piping configuration. The ERC has operated without enough chilled water capacity and the lack of capacity has been challenging to keep the facility cooled at a temperature below 85 degrees C. As an example, the ERC currently has 90T of chilled water capacity of which 30T does not work. As a result, on hot days employees find themselves forced to leave the premises for the day. Consequently, the existing gas fired chiller plant capacity will be increased from the current 90-ton total installed capacity to a pre-engineered estimate of 200-ton total installed capacity. Due to the design process, the project team will be utilizing a more efficient chiller design capable of operating at a low-load capacity. The two new 100-ton chillers will have the capability to operate a 10% low load allowing flexibility in controlling energy consumption. The equipment to be purchased and installed in this phase includes two (2) new 100-ton chillers; new primary chilled water pumps to match new chiller configuration; two (2) new condenser water pumps to match new chiller configuration; two (2) new commercial grade cooling towers matched to the capacity of the new chilled water system; new piping configuration to support new condenser water system and chilled water system; installation of new boiler to accommodate the new chilled water plant design; . In addition, newly designed electrical infrastructure will be installed to support all new equipment. The design of a new performance specification for the installation of a building automated system (BAS) and controls to support the mechanical system will be included in the scope of work under Phase I.

Phase II of the system will include the purchase and installation of four (4) new and efficient variable volume air handler units to replace the existing units which are identified as under performing and/or nearing the end of the useful lifecycle. Currently, there are sections of the facility that require dedicated cooling, but are operating with chemical bearing packaged units. All four of these units currently require the use of Refrigerant 22, more commonly known as R-22. The application of R-22 is currently governed by California Air Resources Board and requires that we maintain a permit and a definitive maintenance and reporting commitment to South Coast Air Quality Management District. Moreover, R-22 is being phased out due to ozone depletion potential and status as a potent greenhouse gas. In our effort to maintain our current LEED EB:OM certification and our commitment to the USGBC in response to our certification, the two units dedicated to the intermediate data facility (IDF) will require 24/7 cooling and therefore will be electric generated; and the two bake lab units will be replaced with one unit which will be tied into the chilled water system.

Schedule

The project is scheduled to begin May 17, 2010 with the engagement of IFactor Consulting, the engineering firm involved with the recent LEED EB: O&M accreditation. IFactor will create the drawings and specifications for the procurement of the mechanical system as well as the installation guidelines. It is anticipated that at the beginning of June 2010 an RFP will be issued seeking the qualifications and

CAPITAL PROJECT WORKPAPER

PROJECT TITLE Downey ERC Chiller Replacement (LEED)	BUDGET NO. 00653.0
WITNESS David Taylor	IN SERVICE DATE 06/30/2012

proposed costs to manage the successful installation of the new system. Primary evaluation factors will include:

- ✓ Proposed labor costs;
- ✓ Professional qualifications;
- ✓ Specialized experience and technical competence;
- ✓ Capacity to accomplish the work;
- ✓ Past performance;
- ✓ Claims and terminations;

It is anticipated that this process will take no more than three (3) weeks and that a selection of a general contractor and award of contract be issued no later than June 30. Upon award the permit applications will be submitted and equipment and material purchased. It is estimated that this process will be completed no later than December 31, 2010.

It is anticipated that the decommissioning of the existing systems will commence in January 2011. Installation of the new systems according to design specifications will commence in February 2011 with anticipation of completing the installation of the mechanical system and new BMS no later than October 2011. Commissioning of the new system will occur upon installation followed by system performance testing.

Detail Estimated List of Cost

Cost Category	Prior Years	2009	2010	2011	2012	Total	Source of Data
Building & Site Construction			1600	1850	1500	4950	Contract proposal
Design & Permit			100	100	150	350	Contract proposal
IT/Telco/Security			25	35	100	160	Standard
Scoping & Architecture			121	151	250	522	Contract proposal
Total	0	0	1846	2136	2000	5982	

CAPITAL PROJECT WORKPAPER

PROJECT TITLE Anaheim Bldg A Chillers Replacement (Chillers 1&2; Chiller 3)	BUDGET NO. 00653.0
WITNESS David Taylor	IN SERVICE DATE 12/31/2010

PROJECT COST (\$000 in 2009\$)	PRIOR YEARS	2009	2010	2011	2012	REMAINING YEARS	TOTAL
DIRECT LABOR	0	0	29	15	0	0	44
DIRECT NONLABOR	0	0	1639	1485	0	0	3124
TOTAL DIRECT CAPITAL	0	0	1668	1500	0	0	3168
COLLECTIBLE							
NET CAPITAL	0	0	1668	1500	0	0	3168
FTE	0	0	.30	.20		0	.50

Business Purpose

Chiller unit is 18 years old and parts are becoming harder to procure and cost to maintain is not economical. This year the chiller's refrigerant pump went out and the cost was \$21,000.00 to replace the pump only. Constant servicing of this unit is not energy efficient or wise money spent. The unit is beyond its useful life. This project requires installing a temp unit for back up. Remove the old chiller and cooling tower, install a new chiller and cooling tower. A new boiler will be required as well. This is the main chiller in the Anaheim CEP which serves heating and cooling to 6 buildings within the Anaheim Campus. When this chiller fails the entire site goes down. It can be difficult for the employees to remain at work when the heating or cooling fails. Therefore this is a significant project for the campus. There is a 2011 component to add a 3rd chiller and associated piping to serve additional buildings not currently being served by the central energy plant.

Physical Description

Year 2010:

Complete engineering of the plans and specifications.

Assemble an RFP for 3 contractors to bid on the project. The scope will include the following;

- Replace the existing Chiller with two direct fired chillers which are twice as efficient and will provide redundancy to prevent the entire Anaheim Campus from losing all cooling capability.
- The old cooling tower will have to be removed and 2 new cooling towers will have to be installed.
- Structural pads for the cooling towers will have to be built.
- There will be some roofing modifications required for the new pads.
- Some of the pumps can be re-used but most of them will need to be replaced.
- The old boiler will have to be replaced with a new boiler.
- There will be extensive chilled water piping.
- There will be lead and possibly asbestos abatement.
- A temporary chiller will have to be installed during the removal of the old chiller to keep the plant operational.
- Misc electrical and mechanical appurtances will be required for this project.
- We are assuming the existing electrical switchboard will have the necessary electrical amp capacity available for this project.
- Inflation, delays caused by outside agencies, disruption due to labor issues/constraints, hazardous material/chemicals not communicated to the project team, unforeseen or differing site conditions all are beyond the control of the project team.

CAPITAL PROJECT WORKPAPER

PROJECT TITLE Anaheim Bldg A Chillers Replacement (Chillers 1&2; Chiller 3)	BUDGET NO. 00653.0
WITNESS David Taylor	IN SERVICE DATE 12/31/2010

- City of Anaheim permit approval process may also increase the scope and costs.
- All work described in the scope section above has been scheduled and priced at straight time to occur during normal working hours, Monday through Friday. There are some known conditions that would necessitate the removal or abatement of hazardous materials (lead based paint and asbestos). There will be some off hours or overtime hours required to complete this project around the existing operations.

Year 2011:

Complete design and engineering pull permits for chiller #3 and buildings B, F and G piping. Purchase and install chiller #3. Install CW piping to buildings B, F and G. Install associated air handlers to serve buildings B, F and G.

Project Justification

The existing CEP chiller is not reliable and has broken down on several occasions causing expensive repair bills. The unit is beyond its useful life. The Anaheim Campus has also grown in capacity and the existing CEP is not producing enough tonnage to the air handlers to efficiently cool the buildings located on the site.

Schedule

The WOA will be submitted in January 2010. Once the WOA is approved then architectural and engineering can be completed and a thorough scope of work can be established. The project will go out for bid as required. Work will commence once contracts are executed to the successful GC. Hopefully work will start by October 1, 2010 and be completed by December 31, 2010.

Year 2011:

Submit second WOA in December 2010, get approvals and contract engineering firm to complete plans for plan check. Obtain contractor pricing for Chiller #3, associated piping and air handlers. Start construction in June 2011 and complete by October 2011.

In-Service Date: Chillers #1 & #2: 12/31/2010
 Chiller #3: 09/30/11

Detail Estimated List of Cost

Cost Category	Prior Years	2009	2010	2011	2012	Total	Source of Data
Building & Site Construction			1498	1000		2498	Contract proposal
Design & Permit			150	350		500	Contract proposal
Systems Furniture							
IT/Telco/Security			5			5	Standard
Scoping & Architecture			15	150		165	Contract proposal
Total			1668	1500	0	3168	

CAPITAL PROJECT WORKPAPER

PROJECT TITLE MPK Data Center Generators	BUDGET NO. 00653.0
WITNESS David Taylor	IN SERVICE DATE 12/31/2011

PROJECT COST (\$000 in 2009\$)	PRIOR YEARS	2009	2010	2011	2012	REMAINING YEARS	TOTAL
DIRECT LABOR	0	0	29	29	0	0	58
DIRECT NONLABOR	0	0	907	3259	0	0	4166
TOTAL DIRECT CAPITAL	0	0	936	3288	0	0	4224
COLLECTIBLE							
NET CAPITAL	0	0	936	3288	0	0	4224
FTE	0	0	.30	.30	0	0	.60

Business Purpose

MPK has experienced major growth in last 5 years

- MPK ~ 24% annually since 2004
- Growth is expected at similar rate for next few years
 - Ordinary Business (“organic”) growth - typically 5-10% annually; varies year to year
 - Projects/Programs require increased facilities resources at both data centers including:
 - Network - Perimeter and WAN
 - SCG AMI
 - Continuing OpEx deployments
 - Smart Grid
 - Data Center Network Refresh

Physical Description

Purchase and installation of 2-2MW diesel generators, additional electrical distribution equipment, and approximately 25,000 gallons of diesel fuel storage capacity. The location chosen for this equipment is both inside and outside (west side) of Bldg C at Monterey Park Headquarters. Approximately 30 existing parking spaces will be lost to the site with this location.

Project Justification

Assumptions

Growth projections

- Assumes continued 5-10% annual growth rate for “ordinary business” – this is the typical long term planning figure
- Estimated loads for project related growth are based on best available information from the projects. Only major projects that are in planning, have been approved, or are presently underway have been considered when estimating future loads
- Major initiatives such as SCG AMI and Smart Grid will require space in the Data Centers

Access and security

- Increased requirements for controls on physical access to sections of the Data Centers are expected; these will be needed to comply with regulations such as NERC-CIP and will significantly impact space planning at both sites

CAPITAL PROJECT WORKPAPER

PROJECT TITLE MPK Data Center Generators	BUDGET NO. 00653.0
WITNESS David Taylor	IN SERVICE DATE 12/31/2011

Dependencies

External agencies will require permits for planning and/or construction

- Major concern is with APCD (RB) and AQMD (MPK) for permits to install and operate generators
- City Permits will be required for other work at both sites

Funding

- Projected in service dates are given. Project funding will need to be in place in time to meet these dates to avoid restrictions on Data Center services and availability

The existing rate of growth at MPK will exhaust all available emergency power capacity by summer 2010. Increased emergency power capacity will be required to meet current and future needs at the Data Center.

Reliability and availability

Improvements to the electrical distribution system are needed to ensure full 24/7 capabilities

Schedule

2010 - 2nd Qtr Pre-design, planning and programming to commence.

2010 – 4th Qtr Construction to commence

2011 – 4th Qtr Construction completion Dec 2011

Detail Estimated List of Cost

Cost Category	Prior Years	2009	2010	2011	2012	Total	Source of Data
Building & Site Construction			572	1788		2360	Contract proposal
Design & Permit			131			131	Contract proposal
Generator (2)				1500		1500	Contract proposal
IT/Telco/Security							
Scoping & Architecture			233			233	Contract proposal
Total			936	3288	0	4224	

CAPITAL PROJECT WORKPAPER

PROJECT TITLE Energy Efficiency Program	BUDGET NO. 00653.0
WITNESS David Taylor	IN SERVICE DATE Blanket

PROJECT COST (\$000 in 2009\$)	PRIOR YEARS	2009	2010	2011	2012	REMAINING YEARS	TOTAL
DIRECT LABOR	0	0	0	0	0	0	0
DIRECT NONLABOR	0	0	0	1000	1000	2000	4000
TOTAL DIRECT CAPITAL	0	0	0	1000	1000	2000	4000
COLLECTIBLE							
NET CAPITAL	0	0	0	1000	1000	2000	4000
FTE	0	0	0	0	0	0	0

Business Purpose

Install Rooftop PV systems at various sites to support federal, state and company renewable energy initiatives, as well as save electric demand, energy and costs.

Install Demand Response systems at various sites to support state and company demand response initiatives, as well as save electric demand, energy and costs.

Physical Description

The following is a description of the PV system installation. In 2011, systems will be installed at Redlands, San Dimas, Palm Desert and Murrieta (cost of \$7.2 million, capable of generating 650 kW). In 2012, systems will be installed at Chatsworth, Monterey Park, Pico and Downey ERC (cost of \$5.6 million, capable of generating 505 kW). The project is scalable.

The following is a description of the Demand Response (DR) control system. This system would control 40 sites, with electricity served by Southern California Edison (the top 40 electricity consuming sites). The system would not only achieve demand response, but would also increase control capabilities, saving energy as well. The HVAC DR system will cost \$800,000 and the lighting DR system will cost \$1.38 million. The increased control capabilities to save energy will cost \$700,000. Total system cost is \$2.88 million. The project is scalable, and is distributed evenly between 2011 and 2012 (\$1.44 million per year). If current rebates and electric cost prevail in 2011 and 2012, the system could generate a payback of 5.2 years. It will save about 1,025 kW of demand and 2.1 million kWh/yr of electric energy).

Project Justification

These systems will not only improve the various sites' operational characteristics (while reducing costs), but will also reduce system-wide power demand at the most critical periods, which will alleviate grid congestion and increase system reliability.

Forecast Methodology

Estimated project cost is based upon Project Manager estimate from project bids provided by construction firms for labor and materials.

Schedule

This is a blanket budget. Schedules for each project are set based on resources and independent project schedules constraints, with schedules designed to complete or have a phase completed, generally within (6) months

CAPITAL PROJECT WORKPAPER

PROJECT TITLE MPK Exterior Site Improvement	BUDGET NO. 00653.0
WITNESS David Taylor	IN SERVICE DATE 12/31/2011

PROJECT COST (\$000 in 2009\$)	PRIOR YEARS	2009	2010	2011	2012	REMAINING YEARS	TOTAL
DIRECT LABOR	0	0	29	29	0	0	58
DIRECT NONLABOR	0	0	735	2707	0	0	3442
TOTAL DIRECT CAPITAL	0	0	764	2736	0	0	3500
COLLECTIBLE							
NET CAPITAL	0	0	764	2735	0	0	3500
FTE	0	0	.30	.30		0	.60

Business Purpose

Resolve on-going deterioration of the MPK parking lot, due to damage from trees, weather, age, and heavy traffic. Reduce storm-water runoff and eliminate the risk future violations. Provide adequate illumination for safe walking after hours or security needs. Resolve sewer blockages that cause a serious recurring health concern.

Physical Description

Replace the existing pavement systems with a new permeable paving system. Reduce storm-water runoff and eliminate the risk future violations. Replace all deteriorated clay sewer pipe from Building C to connection at city main sewer. And replace existing site lighting with new energy efficiency fixtures that will provide the recommended minimum lighting for both safety and security concerns. These include the following projects:

- MPK Exterior Site Improvement
- MPK Sewer Line Replacement
- MPK Parking Lot Lighting Upgrade

Project Justification

The site improvements will improve environmental performance toward storm-water runoff regulations, increase overall energy efficiency of the site, improve site security, and eliminate a potential health hazard.

Schedule

- 2010 Q4 initiate pre-design, planning and design for site improvements
- 2011 Q2 initiate construction of sanitary sewer replacement
- 2011 Q2 initiate construction of site lighting improvements
- 2011 Q4 initiate construction of parking lot replacement

CAPITAL PROJECT WORKPAPER

PROJECT TITLE MPK Exterior Site Improvement	BUDGET NO. 00653.0
WITNESS David Taylor	IN SERVICE DATE 12/31/2011

Detail Estimated List of Cost

Cost Category	Prior Years	2009	2010	2011	2012	Total	Source of Data
Building & Site Construction			650	2135		2785	Contract proposal
Design & Permit			50	150		200	Contract proposal
IT/Telco/Security			45	250		295	Standard
Scoping & Architecture			20	200		220	Contract proposal
Total	0	0	764	2735	0	3500	

CAPITAL PROJECT WORKPAPER

PROJECT TITLE GCT Restack	BUDGET NO. 00697.0
WITNESS David Taylor	IN SERVICE DATE 12/31/2011

PROJECT COST (\$000 in 2009\$)	PRIOR YEARS	2009	2010	2011	2012	REMAINING YEARS	TOTAL
DIRECT LABOR	0	0	0	0	0	0	0
DIRECT NONLABOR	0	0	7391	26000	0	0	33391
TOTAL DIRECT CAPITAL	0	0	7391	26000	0	0	33391
COLLECTIBLE				-7404	0		-7404
NET CAPITAL	0	0	7391	18596	0	0	25987
FTE	0	0	0	0	0	0	0

Business Purpose

SoCalGas occupies approximately 411,000 square feet of space at the Gas Company Tower (“GCT”) under a lease that will expire on November 9, 2011. After extensive evaluation and negotiations for alternatives, an extension of the existing lease for 352,000 square feet was executed in July of 2010 extending the lease for an additional 15 years beyond the current expiration date. The premises will be used for SoCalGas headquarters and other staff functions to support the business needs.

The \$7.4 M allowance is to be funded by the Landlord in November of 2011.

Physical Description

The improvements will consist of construction of leasehold improvements, paint, carpet, upgraded network infrastructure, refurbishment of existing furniture, additional furniture as needed, etc. The project budget will include the following:

- Company Labor - \$.5M
- Leasehold improvements for construction and renovation - \$22.8M
- Furniture - \$7.7M
- Network Equipment - \$2.4M

Project Justification

Extending the lease for 15 additional years requires rehabilitations and upgrades as no major renovation of the existing improvements have been completed.

Forecast Methodology

The budgets were based upon preliminary “Test Fits” completed in Q1 2010 by an architect and then cross checked by an independent General Contractor. Costs for network equipment upgrades were provided by SEu Information Technology.

Schedule

Design, engineering, and permitting are scheduled for 2010 and construction is scheduled for 2011

CAPITAL PROJECT WORKPAPER

PROJECT TITLE GCT Restack	BUDGET NO. 00697.0
WITNESS David Taylor	IN SERVICE DATE 12/31/2011

Detail Estimated List of Cost

Cost Category	Prior Years	2009	2010	2011	2012	Total	Source of Data
Building & Site Construction			4391	15000		19391	Contract proposal
Design & Permit			1500	900		2400	Contract proposal
Systems Furniture				7700		7700	Contract proposal
IT/Telco/Security				2400		2400	Standard
Scoping & Architecture			1500			1500	Contract proposal
Refund from Landlord				-7404		-7404	
Total			7391	18596	0	25987	

CAPITAL PROJECT WORKPAPER

PROJECT TITLE Various MPK Projects – MPK Bldg A Server Room Air Handler Replacement/MPK Chillers #3 & #4						BUDGET NO. 00653.0	
WITNESS David Taylor						IN SERVICE DATE 12/31/2010	
PROJECT COST (\$000 in 2009\$)	PRIOR YEARS	2009	2010	2011	2012	REMAINING YEARS	TOTAL
DIRECT LABOR	0	0	58			0	58
DIRECT NONLABOR	165	1970	2356			0	4491
TOTAL DIRECT CAPITAL	165	1970	2414			0	4549
COLLECTIBLE							
NET CAPITAL	165	1970	2414			0	4549
FTE	0	0	.60			0	.60

Business Purpose

Continuing disaster recovery improvements have resulted in a 2N electrical service redundancy as required for Tier 1 critical services facilities such as MPK Buildings A and B. Redundancy is also required for the Mechanical Systems (chilled water plant).

Physical Description

Project # 7094 Server Room Air Handlers: The 14 Air Handlers (AHUs) are designed to limit structural loads, provide growth contingency, and provide improved site operation and control. Seismic connections will increase reliability in case of earthquake.

Project # 9133 Chillers 1 and 4: Replace old, unreliable, and un-serviceable chillers #1, chiller #3 and #4 with one new 350 ton Gas Absorption Chiller and one new 299 ton Electrical Centrifugal Chiller. Current state of MPK Mechanical infrastructure requires immediate replacement or outages to chilled water system will occur.

Project Justification

Provide increased reliability and operating efficiency for critical server room operations with the replacement of 14 old air handlers with new custom designed units featuring humidity controls and greater energy efficiency. Current equipment has out-lived it's life expectancy and must be replaced to avoid unscheduled server room outage. Existing units are no longer reliable for this use and they no longer meet current energy efficiency requirements.

Schedule

Project # 7094 Server Room Air Handlers:
 2008 Q1 initiate pre-design, planning, and design
 2009 Q2 initiate purchase and installation of the first 7 AHUs
 2010 Q2 initiate purchase and installation of the second 7 AHUs
 2010 Q4 complete

Project # 9133 Chillers 1 and 4:
 2009 Q3 initiate pre-design, planning and design
 2009 Q4 purchase equipment
 2010 Q2 initiate installation of equipment
 2010 Q3 complete

CAPITAL PROJECT WORKPAPER

PROJECT TITLE Various MPK Projects – MPK Bldg A Server Room Air Handler Replacement/MPK Chillers #3 & #4	BUDGET NO. 00653.0
WITNESS David Taylor	IN SERVICE DATE 12/31/2010

Detail Estimated List of Cost

Cost Category	Prior Years	2009	2010	2011	2012	Total	Source of Data
Building & Site Construction		1929	2377			4306	Contract proposal
Design & Permit	165	41	37			243	
Systems Furniture							
IT/Telco/Security							
Scoping & Architecture							
Total	165	1970	2414	0	0	4549	

CAPITAL PROJECT WORKPAPER

PROJECT TITLE Common Plant Blanket-Structure & Improvement - Compton/Redlands (Distr)	BUDGET NO. 00653.0
WITNESS David Taylor	IN SERVICE DATE 12/31/2012

PROJECT COST (\$000 in 2009\$)	PRIOR YEARS	2009	2010	2011	2012	REMAINING YEARS	TOTAL
DIRECT LABOR					73		73
DIRECT NONLABOR					3519		3519
TOTAL DIRECT CAPITAL					3592		3592
COLLECTIBLE							
NET CAPITAL					3592		3592
FTE					.80		.80

Business Purpose

Redlands Parking Lot

The Inland Empire (Redlands HQ Facility) seats approx 450 to 500 employees on any given day. With the mixture of company vehicles and employee vehicles at the site, available parking spaces are very few. The facility actually rents additional parking stalls at the adjacent business to our parking lot. The Headquarters incurs a monthly cost of approx \$7K to rent additional parking stalls so employees can park in a secure environment vs. parking on the street.

Compton Parking Lot

The existing Parking lot at the Compton Head quarters is over 30 years old. Cracks & low spots over time have grown and created some possible safety concerns with foot traffic walking in the existing parking lot. The repairs necessary have become greater over time and a remove & replace of the existing asphalt is what is needed to address the request.

Physical Description

Redlands Parking Lot

Redlands Parking Lot Expansion - Develop two acres adjacent to Redlands HQ with asphalt, lighting, security fencing and cameras. This scope also includes a new entry and exit drive aisles into the parcel, new gates, new gate loops, new concrete approaches, new wrought iron 8' high fencing with cmu pilasters, and stormwater modifications for the total improvement area.

Compton Parking Lot

This project will provide for the removal and processing of the existing asphalt. Removed asphalt will be ground and used for base during the grading process. Finished paving will consist of 4" of new asphalt over a 6" base of crushed material. Lot shall be engineered to insure proper drainage. The project will include as-built drawings and material and labor releases covering the entire scope of work.

Project Justification

Redlands Parking Lot

Creating additional parking in the adjacent lot will supply needs at peak time when building is at its maximum occupancy. It will also provide a safe & secure area for all employees no matter what the time of day or evening.

CAPITAL PROJECT WORKPAPER

PROJECT TITLE Common Plant Blanket-Structure & Improvement - Compton/Redlands (Distr)	BUDGET NO. 00653.0
WITNESS David Taylor	IN SERVICE DATE 12/31/2012

Compton Parking Lot

Removal & replacement of the existing parking lot will address many of the safety concerns brought up by the resident employees. With this work the parking lot will meet all present storm water requirements. It will also give the opportunity to improve the traffic flow at the facility to be more in line with the existing gate locations.

Forecast Methodology

Estimated project cost is based upon Project Manager estimate from prior project bids provided by construction firms for labor and materials.

Schedule

Design for Redlands can start as early as funds can be made available. Construction will take approx 6 months from the date building permit is received.

Design for Compton can also begin as soon as funds are available. The implementation process for an existing occupied parking lot will take more time to complete as project will have to be managed in phases. Project will take approx 9 months to coordinate and complete after building permit can be obtained.

Detail Estimated List of Cost

Cost Category	Prior Years	2009	2010	2011	2012	Total	Source of Data
Building & Site Construction					3042	3042	Contract proposal
Design & Permit					250	250	Contract proposal
IT/Telco/Security					200	200	Standard
Scoping & Architecture					100	100	Contract proposal
Total	0	0	0	0	3592	3592	

CAPITAL PROJECT WORKPAPER

PROJECT TITLE Common Plant Blanket-Structure & Improvement - Spence Street Remodel	BUDGET NO. 00653.0
WITNESS David Taylor	IN SERVICE DATE 12/31/2010

PROJECT COST (\$000 in 2009\$)	PRIOR YEARS	2009	2010	2011	2012	REMAINING YEARS	TOTAL
DIRECT LABOR	0	0	0			0	0
DIRECT NONLABOR	0	207	1001			0	1208
TOTAL DIRECT CAPITAL	0	207	1001			0	1208
COLLECTIBLE							
NET CAPITAL	0	207	1001			0	1208
FTE	0	0	0			0	0

Business Purpose

The project request is specifically for upgrades to the control room to meet current pipeline standards for employees in this environment. These upgrades include ADA/ERGO furniture, kitchen area and restroom renovation. The roof will be replaced during this time as well. New carpet and wall coverings will be installed.. The facility will be brought up to current ADA/ SCG standards during this time.

Physical Description

Our environmental consultant has performed comprehensive testing for lead and asbestos. The final report depicts small amounts in limited areas only, so there will be some spot abatement. Our environmental consultant and our remediation contractor will work together on the remediation of and lead and asbestos removal. Clean air clearances will be achieved prior to employees returning to work. The Spence Street Facility has non-ergonomic cubicles in The Control Room does NOT meet current Pipeline Control Room Management Standards for a 24x7 operation. This is a health and safety concern for the employees based at Spence Street. The projection screen TV's are also beyond their useful life and need to be replaced. Many of the offices house non-ergonomic cubicles and furniture, we have included upgrading those areas. The carpet is beyond its useful life and should be replaced with our new standard during the furniture installation. Additionally the roof is beyond its useful life. The roof is showing signs of cracking and potential leaking areas. The roof will be replaced in order to prevent water intrusion or future mold growth within the facility. Misc electrical and cabling will be required during the upgrades at the facility. Limited remediation of lead and asbestos will be required. An architect and engineering team will be needed for the control room design. The budget will capture the installation of the office furniture, the new control room installation, upgrading the restrooms to meet ADA standards, upgrade of new ADA parking stall and street access, remove the old guard office and install a new man gate from the street, remove the old roof and install a new roof, remove the old wall paper and skim coat the walls with knock down texture, remove old flooring and install new flooring throughout, new paint throughout, associated electrical and cabling for all. I have made provisions to have a security guard staffed on site during the construction while the contractor is not on site. There are currently no fire sprinklers in the building and the client said none are required by the fire department. No budget for noise management is included; the client said it was fine as is. We confirmed with Jane Hsiao regarding the IT switch and upgrade cabling, she said it has already been completed and no upgrades will be required unless it is directly related to the new consoles, we have a budget for that work. We have included a budget for 1 solar light tube per the client's request. We have included costs for an upgraded projector in the conference room.

CAPITAL PROJECT WORKPAPER

PROJECT TITLE Common Plant Blanket-Structure & Improvement - Spence Street Remodel	BUDGET NO. 00653.0
WITNESS David Taylor	IN SERVICE DATE 12/31/2010

Project Justification

FERC requirements and Sempra Energy Utilities standards are needed to be upheld for the employees that work 24x7 365 at this very crucial gas control operation site. The site was built in the 1950's and it is time to upgrade the facility.

Detail Estimated List of Cost

Cost Category	Prior Years	2009	2010	2011	2012	Total	Source of Data
Building & Site Construction			873			873	Contract proposal
Design & Permit			7			7	Contract proposal
Furniture/Audio Visual Equip			250			250	Contract proposal
IT/Telco/Security			30			30	Contract proposal
Scoping & Architecture			48			48	Contract proposal
Total			1208	0	0	1208	

CAPITAL PROJECT WORKPAPER

PROJECT TITLE MPK Data Center Master Plan - Bldg C Server Room Expansion	BUDGET NO. 00653.0
WITNESS David Taylor	IN SERVICE DATE 12/31/2013

PROJECT COST (\$000 in 2009\$)	PRIOR YEARS	2009	2010	2011	2012	REMAINING YEARS	TOTAL
DIRECT LABOR	0	0	0	29	73	0	102
DIRECT NONLABOR	0	0	0	330	6068	3000	9398
TOTAL DIRECT CAPITAL	0	0	0	359	6141	3000	9500
COLLECTIBLE							
NET CAPITAL	0	0	0	359	6141	3000	9500
FTE	0	0	0	.30	.80	0	1.10

Business Purpose

MPK has experienced major growth in last 5 years

- MPK ~ 24% annually since 2004
- Growth is expected at similar rate for next few years
 - Ordinary Business (“organic”) growth - typically 5-10% annually; varies year to year
 - Projects/Programs require increased facilities resources at both data centers including:
 - Network - Perimeter and WAN
 - SCG AMI
 - Continuing OpEx deployments
 - Smart Grid
 - Data Center Network Refresh

Physical Description

Tenant Improvement of Building C. Complete demolition of all interior furnishings and finishes and installation of new building systems designed to meet the new use. Abatement is expected. Structural modifications to the facility may be necessary and will be determined after a complete review of the facility and the scope of work requirements have been completed. The new work will include all infrastructure and support systems necessary for a new stand-alone Data Center that will supplement the existing site services. The building improvements will include new redundant, air-cooled chillers (dedicated back-up to the facility), and new mechanical and electrical distribution infrastructure

Project Justification

Capacity

Increased capacity will be required in order to: Provide additional floor space for equipment housing; Increase capacity of Stand-by Emergency Power (SEP) systems; Increase cooling systems capacity; and Maintain site availability at business acceptable levels.

Growth projections

- Assumes continued 5-10% annual growth rate for “ordinary business” – this is the typical long term planning figure
- Estimated loads for project related growth are based on best available information from the projects. Only major projects that are in planning, have been approved, or are presently underway have been considered when estimating future loads
- Major initiatives such as SCG AMI and Smart Grid will require space in the Data Centers

CAPITAL PROJECT WORKPAPER

PROJECT TITLE MPK Data Center Master Plan - Bldg C Server Room Expansion	BUDGET NO. 00653.0
WITNESS David Taylor	IN SERVICE DATE 12/31/2013

Access and security

- Increased requirements for controls on physical access to sections of the Data Centers are expected; these will be needed to comply with regulations such as NERC-CIP and will significantly impact space planning at both sites

Reliability and availability

Improvements to the electrical distribution system are needed to ensure full 24/7 capabilities

Schedule

2010 - Executive approval

2011 - 2nd Qtr Pre-design, planning and programming to commence.

2012 – 2nd Qtr Construction to commence

2013 – Construction completion by 4th Qtr 2013.

Detail Estimated List of Cost

Cost Category	Prior Years	2010	2011	2012	Remaining	Total	Source of Data
Building & Site Construction				6000	3000	9000	Contract proposal
Design & Permit				141		141	Contract proposal
Systems Furniture							
IT/Telco/Security							
Scoping & Architecture			359			359	Contract proposal
Total		0	359	6141	3000	9500	

CAPITAL PROJECT WORKPAPER

PROJECT TITLE Common Plant Blanket- Environmental & Safety	BUDGET NO. 00654.0
WITNESS David Taylor	IN SERVICE DATE Blanket

PROJECT COST (\$000 in 2009\$)	PRIOR YEARS	2009	2010	2011	2012	REMAINING YEARS	TOTAL
DIRECT LABOR	0	0	0	0	0	0	0
DIRECT NONLABOR	0	181	963	1451	1451	0	4046
TOTAL DIRECT CAPITAL	0	181	963	1451	1451	0	4046
COLLECTIBLE							
NET CAPITAL	0	181	963	1451	1451	0	4046
FTE	0	0	0	0	0	0	0

Business Purpose

This budget funds building and system modifications, site upgrades, and other facility improvements directed to safeguard SCG occupied facilities and sites, protect employees and company property, adhere to codes and regulations, and reduce corporate liability in the safety and environmental areas. Small projects under \$1M are bundled when possible for economies of scale in sourcing. These projects vary year to year based on changes to existing or proposed regulations.

Physical Description

Common project types covered in this budget code are improvements to meet stormwater management regulations. Stormwater compliance includes physical changes to the site including drainage control, curbs and beams, canopies and coverings to manage the flow of stormwater and other best management practices. Concrete pads, hazardous waste storage and other requirements to mitigate environmental risk are covered in this blanket. Safety projects vary in nature, but can include communication systems, fall protection, or other improvements to reduce employee risk. Underground storage tank compliance issues and enhanced vapor recover system upgrades to the fueling systems are included. Improvements to air quality and air compression systems, heat shields, isolation valves, and roof access ladders are included into this blanket.

Project Justification

Facilities Operations and the business units identify requirements based on codes, regulations, and best management practices for environmental and safety. Failure to complete can result in increased risk, NOVs and fines.

Forecast Methodology

Estimated blanket budget is based upon historical spending and future forecast necessary to meet the company compliance and service level agreement.

Schedule

This is a blanket budget. Schedules for each project are set based on resources and independent project schedules constraints, with schedules designed to complete or have a phase completed, generally within (6) months.

CAPITAL PROJECT WORKPAPER

PROJECT TITLE Common Plant Blanket - Miscellaneous Equipment	BUDGET NO. 00664.0
WITNESS David Taylor	IN SERVICE DATE Blanket

PROJECT COST (\$000 in 2009\$)	PRIOR YEARS	2009	2010	2011	2012	REMAINING YEARS	TOTAL
DIRECT LABOR	0	0	0	0	0	0	0
DIRECT NONLABOR	0	0	0	242	242	0	484
TOTAL DIRECT CAPITAL	0	0	0	242	242	0	484
COLLECTIBLE							
NET CAPITAL	0	0	0	242	242	0	484
FTE	0	0	0	0	0	0	0

Business Purpose

This budget funds the purchase and installation of miscellaneous equipment, which does not fall under the scope of any other capital project. This equipment supports the effective operations of the requesting department and its operations. The blanket benefits numerous departments throughout the company by funding equipment purchases, both planned and unplanned due to breakdowns, which enable employees to work efficiently and effectively.

Physical Description

Small project types covered in this budget code are replacements of small equipment in the food preparation and kitchen services areas, machines (jacks or hoists) or other specialized mechanical equipment used in the fleet garages (attached to the building), lab equipment for sampling of soils and wastewater, and the like.

Project Justification

Facilities Operations and the business units identify requirements based on criticality of the facility, the age of the equipment and life cycle, and the implications for failure to complete the replacement or modification. Equipment is replaced at the end of the life cycle, if system failure occurs, for accuracy or reliability of operations, or if excessive maintenance and repair costs point to replacement, and to address technology obsolescence. Equipments keep day to day operations functional. Failure to implement these projects could translate into reduced safety, disruption to the business unit, inability to meet business unit operational needs, higher costs to maintain and repair, and asset devaluation.

Industry professionals, proposals and similar projects provide support for estimates. Project managers, if required to manage scope, are evaluated on adherence to budget and schedule. Standard procurement practices and procedures are used for acquisition of equipment and installation services. This budget code was not utilized until 2006.

Forecast Methodology

Estimated blanket budget is based upon historical spending and future forecast necessary to meet the company compliance and service level agreement.

Schedule

Schedules for individual equipment replacement are usually of short duration and designed to minimally disrupt business operations. Projects are completed, generally within (6) months.

CAPITAL PROJECT WORKPAPER

PROJECT TITLE Branch Office ADA & Ergo	BUDGET NO. 00698.0
WITNESS David Taylor	IN SERVICE DATE 12/31/2011

PROJECT COST (\$000 in 2009\$)	PRIOR YEARS	2009	2010	2011	2012	REMAINING YEARS	TOTAL
DIRECT LABOR	0	0	29	73	0	0	102
DIRECT NONLABOR	0	4768	3649	4427	0	0	12844
TOTAL DIRECT CAPITAL	0	4768	3678	4500	0	0	12946
COLLECTIBLE							
NET CAPITAL	0	4768	3678	4500	0	0	12946
FTE	0	0	.30	.80	0	0	1.10

Business Purpose

Drivers:

- Bring each location into compliance with current Americans with Disabilities Act Accessibility Guidelines (ADAAG), CA Building Code and CA Title 24 guidelines.
- Install adjustable height work tables and stools at each employee position to allow employees to sit or stand during the workday, thereby reducing the risk of repetitive motion injury.

Physical Description

Repair or remove/replace non-compliant sidewalks, walkways, parking stalls, ramps, doors and hardware, equipment, transaction counters, flooring, signs and other equipment.

Remove existing work surfaces and install WorkRite Sierra Series tables and Herman Miller Aeron stools at each employee work station.

Project Justification

The Company entered into a Memorandum of Understanding (MOU) with Disability Rights Advocates (DisabRA) in June 2007 where the Company will remediate all Branch Offices proposed to remain open and those that remain open as of March 30, 2012.

Schedule

2009 Eleven (11) Branch offices- San Fernando, Crenshaw, Fontana, Huntington Park, Pomona, Porterville, South Gate, Visalia, Watts, Palm Springs and Lompoc. These offices will be completed with all ADA/Ergonomic improvements Design, Construction and close out.

2010 Thirteen (13) Branch Offices-Commerce, Delano, El Monte, Hollywood, Lancaster, Oxnard, Santa Maria, Corona, Hanford, Banning, Santa Ana, San Pedro and Dinuba. These offices are on the list to be completed in 2010. Some locations may move to 2011 due to lease concerns and other locations will be elevated to complete in 2010.

CAPITAL PROJECT WORKPAPER

PROJECT TITLE Branch Office ADA & Ergo	BUDGET NO. 00698.0
WITNESS David Taylor	IN SERVICE DATE 12/31/2011

2011 Fifteen (15) Branch Offices- San Bernardino, Hemet, Covina, Monrovia, Ontario, San Luis Obispo, Santa Barbara, Pasadena, Sante Fe Springs, Alhambra, Santa Monica, Glendale, Riverside, Van Nuys and Bellflower. The offices are scheduled to complete in 2011 as B O management can schedule.

Detail Estimated List of Cost

Cost Category	2009	2010	2011	2012	Remaining Years	Total	Source of Data
Building & Site Construction	3000	2183	3000			8183	Contract proposal
Design & Permit	100	100	100			300	Contract proposal
Systems Furniture	1300	1100	1200			3600	Standard
IT/Telco/Security	218	170	100			488	Standard
Scoping & Architecture	150	125	100			375	Contract proposal
Misc. Others							
Total	4768	3678	4500	0	0	12946	

CAPITAL PROJECT WORKPAPER

PROJECT TITLE Common Plant Blanket-Fleet Tools/ Equipment -SCG	BUDGET NO. 00716.0
WITNESS David Taylor	IN SERVICE DATE Blanket

PROJECT COST (\$000 in 2009\$)	PRIOR YEARS	2009	2010	2011	2012	REMAINING YEARS	TOTAL
DIRECT LABOR	0	0	0	0	0	0	0
DIRECT NONLABOR	0	694	100	130	130	0	360
TOTAL DIRECT CAPITAL	0	694	100	130	130	0	360
COLLECTIBLE							
NET CAPITAL	0	694	100	130	130	0	360
FTE	0	0	0	0	0	0	0

Business Purpose

This blanket budget is for the purchase of fleet equipment for the SoCal Gas garages.

Physical Description

The equipment is for mobile diagnostic machines for fleet vehicle maintenance as mobile garage hoists, tire changers, parts cleaners and related equipment.

Project Justification

As newer vehicles are added to the fleet, technology upgrades for diagnostic equipment are required for maintenance. In addition, normal wear and tear on older equipment requires replacement

Forecast Methodology

Estimated blanket budget is based upon historical spending and future forecast necessary to meet the company compliance and service level agreement.

Schedule

This is a blanket budget. Schedules for each project are set based on resources and independent project schedules constraints, with schedules designed to complete or have a phase completed, generally within (4) months

CAPITAL PROJECT WORKPAPER

PROJECT TITLE Common Plant Blanket - NGV Fueling Stations SCG	BUDGET NO. 00734.0
WITNESS David Taylor	IN SERVICE DATE Blanket

PROJECT COST (\$000 in 2009\$)	PRIOR YEARS	2009	2010	2011	2012	REMAINING YEARS	TOTAL
DIRECT LABOR	0	0	0	0	0	0	0
DIRECT NONLABOR	0	117	118	118	100	0	453
TOTAL DIRECT CAPITAL	0	117	118	118	100	0	453
COLLECTIBLE							
NET CAPITAL	0	117	118	118	100	0	453
FTE	0	0	0	0	0	0	0

Business Purpose:

Execute minor equipment replacements/installations at SoCalGas' NGV refueling stations to support continued reliable and effective operation. Bulk funding for both targeted projects; and to contend with unplanned equipment replacements at 22 stations which fall under capital replacement guidelines. Typical replacements include credit card readers, fueling posts, dispenser components, gas dryers, control system components, electrical components, and compressor component replacement. Blanket is for parts and contracted work only.

Physical Description:

While more than 30% of funding is for unplanned failures, there are several targeted projects over GRC period to be included in this Plant Category (these projects are not redundant with the \$11.215 million capital under Plant 734 for SCG Station Upgrades and New installations, also represented in the Direct Testimony of Mr. David Taylor.) The planned projects under this segregated request include:

- 2010 – Upgrade the existing Fuel Force Panel (customer interface) at 9 public accessible NGV Stations.
- 2011 – Install remote monitoring equipment at four (4) NGV stations and upgrade the remote monitoring management software to reduce downtime associated with unscheduled shutdowns.
- 2012 - Upgrade the NGV Fleet Time-Fill pressure regulation systems (to support improved temperature compensation) at 20 fleet fueling sites.

Each of these projects will require approximately \$80,000 of the annual funding request. The remaining funding is for unplanned equipment replacement due to failure at any one of 22 CNG fueling stations operated by SoCalGas.

Project Justification:

2010 - Upgrade the existing Fuel-Force Panel at the stations – Currently, SoCalGas is using the Fuel-Force system to manage the fueling and credit card transactions at its (9) public access stations. These systems use old hardware and software technology that is becoming both obsolete and problematic.

CAPITAL PROJECT WORKPAPER

PROJECT TITLE Common Plant Blanket - NGV Fueling Stations SCG	BUDGET NO. 00734.0
WITNESS David Taylor	IN SERVICE DATE Blanket

SoCalGas will replace all of the old customer interface panel systems with the latest generation hardware and software. The upgrade will significantly improve reliability, customer ability to use the system, and greatly reduce the equipment down time.

2011 NGV Remote Monitoring and Management Software Upgrade- SoCalGas is currently using a PLC-based management software to communicate remotely with 5 of its NGV stations for troubleshooting and diagnostic analysis when stations shut down. The single user system is arcane and inflexible for users. SoCalGas proposes to install a monitoring system which will allow multiple SCG technicians to view station status and operational state remotely - from anywhere (mobile monitoring) within the service territory to keep maintenance cost contained as the stations move well past their 20th year in operation.

Along with this host system replacement, SoCalGas will install compatible PLCs at four (4) additional sites to support this enhanced remote monitoring scope. Collectively, this completed work will increase station availability due to quicker technician response time/return-to-service activity.

2012 Upgrade the NGV Fleet Time Fill Regulation system. SoCalGas is currently using a basic regulator configuration to dispense fuel for all SoCalGas Fleet fueling operations. The systems in place do not fully compensate for gas temperature effects which is critical for full fueling. One of the greatest resulting complaints from SoCalGas Fleet operators is that they can not get a "full-fill". The new ANGI regulation panel proposed for installation at each station will enable fueling to be more fully temperature compensated, resulting in greater capacity fueling for all vehicles.

Schedule:

As indicated above for planned projects. The balance of the capital is for unscheduled failures and is estimated for each year to be approximately \$18,000 - \$38,000. This unallocated balance translates to approximately \$1,000-\$2,000 per station (for each \$1/2-\$1 million capital asset) per year.

CAPITAL PROJECT WORKPAPER

PROJECT TITLE NGV Various SCG Sites Fueling Stations – Reliability, Capacity Upgrades and New Stations - Bulk Account.						BUDGET NO. 00734.0	
WITNESS David Taylor						IN SERVICE DATE 12/31/2012	
PROJECT COST (\$000 in 2009\$)	PRIOR YEARS	2009	2010	2011	2012	REMAINING YEARS	TOTAL
DIRECT LABOR							
DIRECT NONLABOR			1510	1935	2220	5550	11215
TOTAL DIRECT CAPITAL			1510	1935	2220	5550	11215
COLLECTIBLE							
NET CAPITAL			1510	1935	2220	5550	11215
FTE							

Business Purpose:

To enhance the refueling reliability, capacity and response time for public and SCG Fleet NGV users at SCG NGV fueling stations. Currently, 9 of the 22 SCG-owned stations provide dual utility and public fueling service. The capital infusion will provide the following enhancement to SCG's current NGV station infrastructure:

1. Provide additional throughput at all 9 public accessible and heavy use stations;
2. Increase storage and operating pressure of critical stations from 3600 psig to 4500 psig;
3. Provide backup compressors at all of SCG NGV public fueling stations to improve reliability and capacity.
4. Standardize on critical compression equipment at all SCG NGV stations to improve reliability and return-to-service time following unscheduled maintenance on aging infrastructure.
5. Install 3 new NGV stations (public accessible) at strategic locations throughout SCG service territories to enhance SCG fleet utilization of NGVs and to promote public use of CNG as a vehicle fuel.

Physical Description:

SCG is proposing to upgrade 2 public-accessible NGV stations and 2 Fleet-only NGV fueling stations per year. In addition to the station upgrades, SCG seeks funding to install one new NGV station per year, with work starting in 2012 and the first new station commissioned in 2013. A total of 3 new stations will be commissioned by 2015. Note: were sites under review and prioritization as of this writing. Attachment "SCG NGV fueling Station Plan 2012 GRC...xls" below provides detail on the scope, timing, location and cost of the proposed capital work for which funding under this plant account is being requested.



SCG NGV fueling
Station Plan 2012 GR

CAPITAL PROJECT WORKPAPER

PROJECT TITLE NGV Various SCG Sites Fueling Stations – Reliability, Capacity Upgrades and New Stations - Bulk Account.	BUDGET NO. 00734.0
WITNESS David Taylor	IN SERVICE DATE 12/31/2012

The following tables within the attachment provide specific detail by station.

- TABLE 1 – NGV Infrastructures Improvement Summary
- TABLE 2 – Public Accessible Stations NGV Infrastructures Improvement
- TABLE 3 – SCG Fleet (only) Stations NGV Infrastructures Improvement
- TABLE 4 – Proposed New NGV Station Installation schedule-by year – thru 2015.

Project Justification:

SoCalGas is committed to operating and maintaining a reliable and effective fueling infrastructure to power its own NGV fleet to; support the use of lower emission vehicles in its operation and to provide the public with reliable fueling stations where such can be supported as a cost-effective derivative of SoCalGas fleet fueling assets and mission. There were 22 Company fueling stations at the time this document was prepared, with 9 of these stations serving the public in the fueling of CNG powered fleet and private vehicles. Many of these stations were commissioned over 15 years ago, when vehicle fueling profiles were different and station use was not as impacted by larger capacity vehicles and fleet sizes. Routine aging and its effects on reliability has also impacted station operations in recent years.

The capital outlay proposed in this plant account will allow for sustained support of the SCG fleet operations and posture SCG for improved customer fueling operations at its current and to-be added stations (post 2012 commissioning) for the next 10 years.

Specifically, the proposed redundant compressors at sites will increase operating reliability and effective fueling capacity at the targeted stations. Limited redundancy will allow for problems associated with critical equipment to be resolve without interfering with NGV fueling operations. Further, upgrading the station operating and storage pressure to 4500 PSIG and installing new priority panels and incorporating direct fill features will enable NGV customer and fleet vehicles to experience a true “full-fill” at the SCG NGV station each and every fueling stop (the target stations are all subject to vehicles experiencing less than full tank fillings due to capacity limitations.) In addition, it is expected the improvements will reduce the time stations are unavailable for public and fleet fueling by 80% over the next 5 years.

Forecast Methodology:

The costs shown in Tables 1, 2, 3 and 4 are direct cost based on previous NGV station work performed by SCG or contracted/quoted by 3rd parties.

Schedule

Refer to the attached Tables for the proposed project schedule of work by location.

Southern California Gas Company
NGV Stations Infrastructures Improvement Plans (5 years)

TABLE 1 - NGV Infrastructure Improvement Summary

NGV Infrastructures Improvement	2010	2011	2012	2013	2014	2015
Public NGV Stations	Budgetary Estimate \$					
Azusa	600,000	315,000				
Garden Grove	450,000	250,000				
Riverside		415,000	245,000			
Oxnard		515,000	295,000			
ERC			450,000	200,000		
Santa Barbara			410,000	280,000		
Saticoy				410,000	280,000	
Compton				410,000	280,000	
Pico Rivera					425,000	285,000
Private NGV Stations						
Palm Desert	200,000	120,000				
182nd Street	200,000	120,000				
Crenshaw		200,000	120,000	100,000		
San Bernardino			200,000	120,000		
Chino				200,000	120,000	
Yukon					200,000	120,000
Huntington Park					300,000	220,000
Santa Monica	20,000					
Anahiem	20,000					
Pasadena	20,000					
Proposed New NGV Stations						
Station #1			500,000	200,000		
Station #2				500,000	200,000	
Station #3					500,000	200,000
Proposed Annual Budget	1,510,000	1,935,000	2,220,000	2,420,000	2,305,000	825,000

11,215,000