Application of SOUTHERN CALIFORNIA GAS)
COMPANY for authority to update its gas revenue)
requirement and base rates)
effective January 1, 2019   (U 904-G))

Application No. 17-10-___

Exhibit No.: (SCG-17-CWP)

CAPITAL WORKPAPERS TO

PREPARED DIRECT TESTIMONY

OF RENE F. GARCIA

ON BEHALF OF SOUTHERN CALIFORNIA GAS COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

OCTOBER 2017

Exhibit SCG-17-CWP - SMART METER PROGRAM

DOCUMENT	PAGE

Overall Summary For Exhibit No. SCG-17-CWP

Area:	**SMART METER PROGRAM**
Witness:	**Rene F. Garcia**

	In 2016 $ (000)		
	Adjusted-Forecast		
	2017	**2018**	**2019**
A. AMI Balancing Account - Capital	24,718	7,524	0
Total	**24,718**	**7,524**	**0**

Note: Totals may include rounding differences.

Area:	SMART METER PROGRAM	
Witness:	Rene F. Garcia	
Category:	A. AMI Balancing Account - Capital	
Workpaper:	VARIOUS	

Summary for Category: A. AMI Balancing Account - Capital

	In 2016$ (000)			
	Adjusted-Recorded	**Adjusted-Forecast**		
	2016	**2017**	**2018**	**2019**
Labor	0	10,124	288	0
Non-Labor	0	14,594	7,236	0
NSE	0	0	0	0
Total	**0**	**24,718**	**7,524**	**0**
FTE	0.0	133.0	2.0	0.0

00811A AM - Computer Hardware Labor/Non-Labor

Labor	0	218	0	0
Non-Labor	0	700	0	0
NSE	0	0	0	0
Total	**0**	**918**	**0**	**0**
FTE	0.0	1.7	0.0	0.0

00811B AM - Computer Software Labor/Non-Labor

Labor	0	127	0	0
Non-Labor	0	131	0	0
NSE	0	0	0	0
Total	**0**	**258**	**0**	**0**
FTE	0.0	1.2	0.0	0.0

00811C AM - Self-Developed Software Labor/Non-Labor

Labor	0	134	0	0
Non-Labor	0	137	0	0
NSE	0	0	0	0
Total	**0**	**271**	**0**	**0**
FTE	0.0	1.2	0.0	0.0

00811D AM - Data Collector Unit Labor/Non-Labor

Labor	0	4,020	288	0
Non-Labor	0	2,501	2,568	0
NSE	0	0	0	0
Total	**0**	**6,521**	**2,856**	**0**
FTE	0.0	45.5	2.0	0.0

00811E AM - Module Installs Labor/Non-Labor

Labor	0	3,204	0	0
Non-Labor	0	9,069	4,440	0
NSE	0	0	0	0
Total	**0**	**12,273**	**4,440**	**0**
FTE	0.0	48.8	0.0	0.0

Note: Totals may include rounding differences.

Area:	SMART METER PROGRAM
Witness:	Rene F. Garcia
Category:	A. AMI Balancing Account - Capital
Workpaper:	VARIOUS

	In 2016$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
00811F AM - Meter Installs Labor/Non-Labor				
Labor	0	2,421	0	0
Non-Labor	0	1,683	0	0
NSE	0	0	0	0
Total	**0**	**4,104**	**0**	**0**
FTE	0.0	34.6	0.0	0.0
00811G AM - Data Collector Unit Poles Labor/Non-Labor				
Labor	0	0	0	0
Non-Labor	0	373	228	0
NSE	0	0	0	0
Total	**0**	**373**	**228**	**0**
FTE	0.0	0.0	0.0	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00811A - AM - Computer Hardware Labor/Non-Labor

Area:	SMART METER PROGRAM
Witness:	Rene F. Garcia
Budget Code:	00811.0
Category:	A. AMI Balancing Account - Capital
Category-Sub:	1. Systems Operations
Workpaper Group:	00811A - AM - Computer Hardware Labor/Non-Labor

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	218	0	0
Non-Labor	Zero-Based	0	0	0	0	0	700	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**918**	**0**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0

Business Purpose:

This budget category records expenditure for labor and non-labor costs associated with the Software Development group supporting the Advanced Metering Infrastructure (AMI) project. This group oversees the systems impacted by AM data, including the Headend Meter Data Management System (MDMS).

Physical Description:

The labor costs represent the Software Development group which supports Headend, MDMS and CIS. Non-Labor costs include hardware for Headend, MDMS and Enterprise Data Warehouse.

Project Justification:

These costs are necessary to maintain and manage the systems in place for the AMI project and on-going operations.

Note: Totals may include rounding differences.

Area:	SMART METER PROGRAM
Witness:	Rene F. Garcia
Budget Code:	00811.0
Category:	A. AMI Balancing Account - Capital
Category-Sub:	1. Systems Operations
Workpaper Group:	00811A - AM - Computer Hardware Labor/Non-Labor

Forecast Methodology:

Labor - Zero-Based

Estimate for labor is based on current budget plan for AMI final deployment year 2017. These costs are covered by the AMI Balancing Account. Capital costs for the on-going Advanced Meter Operations (AMO) group will be forecasted in other witness areas for TY 2019.

Non-Labor - Zero-Based

Estimate for non-labor is based on current budget for final deployment year 2017. These costs are covered by the AMI Balancing Account. Capital costs for the on-going Advanced Meter Operations (AMO) group will be forecasted in other witness areas for TY 2019.

NSE - Zero-Based

n/a

**Beginning of Workpaper Sub Details for
Workpaper Group 00811A**

Area:	SMART METER PROGRAM
Witness:	Rene F. Garcia
Budget Code:	00811.0
Category:	A. AMI Balancing Account - Capital
Category-Sub:	1. Systems Operations
Workpaper Group:	00811A - AM - Computer Hardware Labor/Non-Labor
Workpaper Detail:	00811A.001 - AM - Computer Hardware Labor/Non-Labor

In-Service Date: 04/30/2017

Description:

AM - Computer Hardware Labor/Non-Labor

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	95	0	0
Non-Labor	380	0	0
NSE	0	0	0
Total	475	0	0
FTE	0.8	0.0	0.0

Note: Totals may include rounding differences.

Area:	SMART METER PROGRAM
Witness:	Rene F. Garcia
Budget Code:	00811.0
Category:	A. AMI Balancing Account - Capital
Category-Sub:	1. Systems Operations
Workpaper Group:	00811A - AM - Computer Hardware Labor/Non-Labor
Workpaper Detail:	00811A.002 - AM - Computer Hardware Labor/Non-Labor

In-Service Date: 06/30/2017

Description:

AM - Computer Hardware Labor/Non-Labor

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	33	0	0
Non-Labor	4	0	0
NSE	0	0	0
Total	37	0	0
FTE	0.3	0.0	0.0

Note: Totals may include rounding differences.

Area:	SMART METER PROGRAM
Witness:	Rene F. Garcia
Budget Code:	00811.0
Category:	A. AMI Balancing Account - Capital
Category-Sub:	1. Systems Operations
Workpaper Group:	00811A - AM - Computer Hardware Labor/Non-Labor
Workpaper Detail:	00811A.003 - AM - Computer Hardware Labor/Non-Labor

In-Service Date: 09/30/2017

Description:

AM - Computer Hardware Labor/Non-Labor

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	45	0	0
Non-Labor	310	0	0
NSE	0	0	0
Total	**355**	**0**	**0**
FTE	0.3	0.0	0.0

Note: Totals may include rounding differences.

Area:	SMART METER PROGRAM
Witness:	Rene F. Garcia
Budget Code:	00811.0
Category:	A. AMI Balancing Account - Capital
Category-Sub:	1. Systems Operations
Workpaper Group:	00811A - AM - Computer Hardware Labor/Non-Labor
Workpaper Detail:	00811A.004 - AM - Computer Hardware Labor/Non-Labor

In-Service Date: 12/31/2017

Description:

AM - Computer Hardware Labor/Non-Labor

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	45	0	0
Non-Labor	6	0	0
NSE	0	0	0
Total	51	0	0
FTE	0.3	0.0	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00811B - AM - Computer Software Labor/Non-Labor

Area:	SMART METER PROGRAM
Witness:	Rene F. Garcia
Budget Code:	00811.0
Category:	A. AMI Balancing Account - Capital
Category-Sub:	1. Systems Operations
Workpaper Group:	00811B - AM - Computer Software Labor/Non-Labor

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	127	0	0
Non-Labor	Zero-Based	0	0	0	0	0	131	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**258**	**0**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0

Business Purpose:

This budget category records a portion (49% per SoCalGas Plant Accounting) the expenditure for labor and non-labor costs associated with the Headend & MDMS Services groups and the Software Development group supporting the Advanced Metering Infrastructure (AMI) project.

Physical Description:

The labor costs represent vendor services in the Software Development group for Enterprise Data Warehouse Platform, the Systems Operations group and the Systems, Architecture, Security & Delivery group. Non-Labor costs include software for Data Warehouse SQL Server and other vendor software licenses necessary for system operations.

Project Justification:

These costs are necessary to maintain and manage the systems in place for the AMI project and on-going operations.

Note: Totals may include rounding differences.

Area:	SMART METER PROGRAM
Witness:	Rene F. Garcia
Budget Code:	00811.0
Category:	A. AMI Balancing Account - Capital
Category-Sub:	1. Systems Operations
Workpaper Group:	00811B - AM - Computer Software Labor/Non-Labor

Forecast Methodology:

Labor - Zero-Based

Estimate for labor is based on current budget plan for AMI final deployment year 2017. These costs are covered by the AMI Balancing Account. Capital costs for the on-going Advanced Meter Operations (AMO) group will be forecasted in other witness areas for TY 2019.

Non-Labor - Zero-Based

Estimate for non-labor is based on current budget for final deployment year 2017. These costs are covered by the AMI Balancing Account. Capital costs for the on-going Advanced Meter Operations (AMO) group will be forecasted in other witness areas for TY 2019.

NSE - Zero-Based

n/a

**Beginning of Workpaper Sub Details for
Workpaper Group 00811B**

Area:	SMART METER PROGRAM
Witness:	Rene F. Garcia
Budget Code:	00811.0
Category:	A. AMI Balancing Account - Capital
Category-Sub:	1. Systems Operations
Workpaper Group:	00811B - AM - Computer Software Labor/Non-Labor
Workpaper Detail:	00811B.001 - AM - Computer Software Labor/Non-Labor

In-Service Date: 04/30/2017

Description:

AM - Computer Software Labor/Non-Labor

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	41	0	0
Non-Labor	98	0	0
NSE	0	0	0
Total	139	0	0
FTE	0.4	0.0	0.0

Note: Totals may include rounding differences.

Area:	SMART METER PROGRAM
Witness:	Rene F. Garcia
Budget Code:	00811.0
Category:	A. AMI Balancing Account - Capital
Category-Sub:	1. Systems Operations
Workpaper Group:	00811B - AM - Computer Software Labor/Non-Labor
Workpaper Detail:	00811B.002 - AM - Computer Software Labor/Non-Labor

In-Service Date: 06/30/2017

Description:

AM - Computer Software Labor/Non-Labor

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	23	0	0
Non-Labor	26	0	0
NSE	0	0	0
Total	49	0	0
FTE	0.2	0.0	0.0

Note: Totals may include rounding differences.

Area:	SMART METER PROGRAM
Witness:	Rene F. Garcia
Budget Code:	00811.0
Category:	A. AMI Balancing Account - Capital
Category-Sub:	1. Systems Operations
Workpaper Group:	00811B - AM - Computer Software Labor/Non-Labor
Workpaper Detail:	00811B.003 - AM - Computer Software Labor/Non-Labor

In-Service Date: 09/30/2017

Description:

AM - Computer Software Labor/Non-Labor

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	32	0	0
Non-Labor	4	0	0
NSE	0	0	0
Total	36	0	0
FTE	0.3	0.0	0.0

Note: Totals may include rounding differences.

Area:	SMART METER PROGRAM
Witness:	Rene F. Garcia
Budget Code:	00811.0
Category:	A. AMI Balancing Account - Capital
Category-Sub:	1. Systems Operations
Workpaper Group:	00811B - AM - Computer Software Labor/Non-Labor
Workpaper Detail:	00811B.004 - AM - Computer Software Labor/Non-Labor

In-Service Date: 12/31/2017

Description:

AM - Computer Software Labor/Non-Labor

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	31	0	0
Non-Labor	3	0	0
NSE	0	0	0
Total	**34**	**0**	**0**
FTE	0.3	0.0	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00811C - AM - Self-Developed Software Labor/Non-Labor

Area:	SMART METER PROGRAM
Witness:	Rene F. Garcia
Budget Code:	00811.0
Category:	A. AMI Balancing Account - Capital
Category-Sub:	1. Systems Operations
Workpaper Group:	00811C - AM - Self-Developed Software Labor/Non-Labor

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	134	0	0
Non-Labor	Zero-Based	0	0	0	0	0	137	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	271	0	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0

Business Purpose:

This budget category records a portion (51% per SoCalGas Plant Accounting) the expenditure for labor and non-labor costs associated with the Headend & MDMS Services groups and the software development group supporting the Advanced Metering Infrastructure (AMI) project.

Physical Description:

The labor costs represent vendor services in the Software Development group for Enterprise Data Warehouse Platform, the Systems Operations group and the Systems, Architecture, Security & Delivery group. Non-Labor costs include software for Data Warehouse SQL Server and other vendor software licenses necessary for system operations.

Project Justification:

These costs are necessary to maintain and manage the systems in place for the AMI project and on-going operations.

Note: Totals may include rounding differences.

Area: SMART METER PROGRAM

Witness: Rene F. Garcia

Budget Code: 00811.0

Category: A. AMI Balancing Account - Capital

Category-Sub: 1. Systems Operations

Workpaper Group: 00811C - AM - Self-Developed Software Labor/Non-Labor

Forecast Methodology:

Labor - Zero-Based

Estimate for labor is based on current budget plan for AMI final deployment year 2017. These costs are covered by the AMI Balancing Account. Capital costs for the on-going Advanced Meter Operations (AMO) group will be forecasted in other witness areas for TY 2019.

Non-Labor - Zero-Based

Estimate for non-labor is based on current budget for final deployment year 2017. These costs are covered by the AMI Balancing Account. Capital costs for the on-going Advanced Meter Operations (AMO) group will be forecasted in other witness areas for TY 2019.

NSE - Zero-Based

n/a

**Beginning of Workpaper Sub Details for
Workpaper Group 00811C**

Area:	SMART METER PROGRAM
Witness:	Rene F. Garcia
Budget Code:	00811.0
Category:	A. AMI Balancing Account - Capital
Category-Sub:	1. Systems Operations
Workpaper Group:	00811C - AM - Self-Developed Software Labor/Non-Labor
Workpaper Detail:	00811C.001 - AM - Self-Developed Software Labor/Non-Labor

In-Service Date: 04/30/2017

Description:

AM - Self-Developed Software Labor/Non-Labor

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	43	0	0
Non-Labor	103	0	0
NSE	0	0	0
Total	**146**	**0**	**0**
FTE	0.4	0.0	0.0

Note: Totals may include rounding differences.

Area:	SMART METER PROGRAM
Witness:	Rene F. Garcia
Budget Code:	00811.0
Category:	A. AMI Balancing Account - Capital
Category-Sub:	1. Systems Operations
Workpaper Group:	00811C - AM - Self-Developed Software Labor/Non-Labor
Workpaper Detail:	00811C.002 - AM - Self-Developed Software Labor/Non-Labor

In-Service Date: 06/30/2017

Description:

AM - Self-Developed Software Labor/Non-Labor

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	23	0	0
Non-Labor	27	0	0
NSE	0	0	0
Total	50	0	0
FTE	0.2	0.0	0.0

Note: Totals may include rounding differences.

Area:	SMART METER PROGRAM
Witness:	Rene F. Garcia
Budget Code:	00811.0
Category:	A. AMI Balancing Account - Capital
Category-Sub:	1. Systems Operations
Workpaper Group:	00811C - AM - Self-Developed Software Labor/Non-Labor
Workpaper Detail:	00811C.003 - AM - Self-Developed Software Labor/Non-Labor

In-Service Date: 09/30/2017

Description:

AM - Self-Developed Software Labor/Non-Labor

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	34	0	0
Non-Labor	4	0	0
NSE	0	0	0
Total	38	0	0
FTE	0.3	0.0	0.0

Note: Totals may include rounding differences.

Area:	SMART METER PROGRAM
Witness:	Rene F. Garcia
Budget Code:	00811.0
Category:	A. AMI Balancing Account - Capital
Category-Sub:	1. Systems Operations
Workpaper Group:	00811C - AM - Self-Developed Software Labor/Non-Labor
Workpaper Detail:	00811C.004 - AM - Self-Developed Software Labor/Non-Labor

In-Service Date: 12/31/2017

Description:

AM - Self-Developed Software Labor/Non-Labor

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	34	0	0
Non-Labor	3	0	0
NSE	0	0	0
Total	**37**	**0**	**0**
FTE	0.3	0.0	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00811D - AM - Data Collector Unit Labor/Non-Labor

Area:	SMART METER PROGRAM
Witness:	Rene F. Garcia
Budget Code:	00811.0
Category:	A. AMI Balancing Account - Capital
Category-Sub:	1. Systems Operations
Workpaper Group:	00811D - AM - Data Collector Unit Labor/Non-Labor

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Labor	Zero-Based	0	0	0	0	0	4,020	288	0
Non-Labor	Zero-Based	0	0	0	0	0	2,501	2,568	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**6,521**	**2,856**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	45.5	2.0	0.0

Business Purpose:

This budget category records expenditure for labor and non-labor costs associated with the Advanced Meter Network, Technology & Operations group supporting the Advanced Metering Infrastructure (AMI) project.

Physical Description:

The labor costs represent the Network Management, DCU Network Deployment and Business Systems Analytics groups, as well as vendor services necessary for network management and operations. The non-labor costs represent expenditures necessary for management and deployment of the network, such as permits, DCU hardware, leases, DCU installation, and other contracted services.

Project Justification:

These costs are necessary to maintain and manage the systems in place for the AMI project and on-going operations.

Note: Totals may include rounding differences.

Area: SMART METER PROGRAM

Witness: Rene F. Garcia

Budget Code: 00811.0

Category: A. AMI Balancing Account - Capital

Category-Sub: 1. Systems Operations

Workpaper Group: 00811D - AM - Data Collector Unit Labor/Non-Labor

Forecast Methodology:

Labor - Zero-Based

Estimate for labor is based on current budget plan for AMI final deployment year 2017. These costs are covered by the AMI Balancing Account. Capital costs for the on-going Advanced Meter Operations (AMO) group will be forecasted in other witness areas for TY 2019.

Non-Labor - Zero-Based

Estimate for non-labor is based on current budget for final deployment year 2017. These costs are covered by the AMI Balancing Account. Capital costs for the on-going Advanced Meter Operations (AMO) group will be forecasted in other witness areas for TY 2019.

NSE - Zero-Based

n/a

**Beginning of Workpaper Sub Details for
Workpaper Group 00811D**

Area:	SMART METER PROGRAM
Witness:	Rene F. Garcia
Budget Code:	00811.0
Category:	A. AMI Balancing Account - Capital
Category-Sub:	1. Systems Operations
Workpaper Group:	00811D - AM - Data Collector Unit Labor/Non-Labor
Workpaper Detail:	00811D.001 - AM - Data Collector Unit Labor/Non-Labor
In-Service Date:	Not Applicable
Description:	

AM - Data Collector Unit Labor/Non-Labor

Forecast In 2016 $(000)			
Years	2017	2018	2019
Labor	4,020	288	0
Non-Labor	2,501	2,568	0
NSE	0	0	0
Total	6,521	2,856	0
FTE	45.5	2.0	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00811E - AM - Module Installs Labor/Non-Labor**

Area:	SMART METER PROGRAM
Witness:	Rene F. Garcia
Budget Code:	00811.0
Category:	A. AMI Balancing Account - Capital
Category-Sub:	1. Systems Operations
Workpaper Group:	00811E - AM - Module Installs Labor/Non-Labor

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	3,204	0	0
Non-Labor	Zero-Based	0	0	0	0	0	9,069	4,440	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**12,273**	**4,440**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	48.8	0.0	0.0

Business Purpose:

This budget category records expenditure for labor and non-labor costs associated with module purchases. Per the AMI business case, modules are purchased by Advanced Meter to be installed on 6 million meters.

Physical Description:

The labor costs represent the cost paid to the meter vendors for installation of the module onto a meter. The non-labor costs represent the cost of the module and associated taxes. This budget category also includes associated credits for those modules that are returned to the vendor due to deficiencies.

Project Justification:

These costs are necessary to maintain and manage the systems in place for the AMI project and on-going operations.

Note: Totals may include rounding differences.

Area:	SMART METER PROGRAM
Witness:	Rene F. Garcia
Budget Code:	00811.0
Category:	A. AMI Balancing Account - Capital
Category-Sub:	1. Systems Operations
Workpaper Group:	00811E - AM - Module Installs Labor/Non-Labor

Forecast Methodology:

Labor - Zero-Based

Estimate for labor is based on current budget plan for AMI final deployment year 2017. These costs are covered by the AMI Balancing Account. Capital costs for the on-going Advanced Meter Operations (AMO) group will be forecasted in other witness areas for TY 2019.

Non-Labor - Zero-Based

Estimate for non-labor is based on current budget for final deployment year 2017 and post deployment year 2018. These costs are covered by the AMI Balancing Account. Capital costs for the on-going Advanced Meter Operations (AMO) group will be forecasted in other witness areas for TY 2019.

NSE - Zero-Based

n/a

**Beginning of Workpaper Sub Details for
Workpaper Group 00811E**

Area:	SMART METER PROGRAM
Witness:	Rene F. Garcia
Budget Code:	00811.0
Category:	A. AMI Balancing Account - Capital
Category-Sub:	1. Systems Operations
Workpaper Group:	00811E - AM - Module Installs Labor/Non-Labor
Workpaper Detail:	00811E.001 - AM - Module Installs Labor/Non-Labor

In-Service Date: Not Applicable

Description:

AM - Module Installs Labor/Non-Labor

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	3,204	0	0
Non-Labor	9,069	4,440	0
NSE	0	0	0
Total	**12,273**	**4,440**	**0**
FTE	48.8	0.0	0.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
00811F - AM - Meter Installs Labor/Non-Labor**

Area:	SMART METER PROGRAM
Witness:	Rene F. Garcia
Budget Code:	00811.0
Category:	A. AMI Balancing Account - Capital
Category-Sub:	1. Systems Operations
Workpaper Group:	00811F - AM - Meter Installs Labor/Non-Labor

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	2,421	0	0
Non-Labor	Zero-Based	0	0	0	0	0	1,683	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		**0**	**0**	**0**	**0**	**0**	**4,104**	**0**	**0**
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	34.6	0.0	0.0

Business Purpose:

This budget category records expenditure for labor and non-labor costs associated with meter and regulator purchases and associated taxes. Per the AMI business case, meters and regulators are purchased by both Advanced Meter and Customer Service Field (CSF) for the deployment period.

Physical Description:

The labor costs represent overhead costs and the non-labor are the costs (including taxes) of the meter and regulator purchases from mainly two vendor sources.

Project Justification:

These costs are necessary to maintain and manage the systems in place for the AMI project and on-going operations.

Note: Totals may include rounding differences.

Area: SMART METER PROGRAM

Witness: Rene F. Garcia

Budget Code: 00811.0

Category: A. AMI Balancing Account - Capital

Category-Sub: 1. Systems Operations

Workpaper Group: 00811F - AM - Meter Installs Labor/Non-Labor

Forecast Methodology:

Labor - Zero-Based

Estimate for labor is based on current budget plan for AMI final deployment year 2017. These costs are covered by the AMI Balancing Account. Capital costs for the on-going Advanced Meter Operations (AMO) group will be forecasted in other witness areas for TY 2019.

Non-Labor - Zero-Based

Estimate for non-labor is based on current budget for final deployment year 2017. These costs are covered by the AMI Balancing Account. Capital costs for the on-going Advanced Meter Operations (AMO) group will be forecasted in other witness areas for TY 2019.

NSE - Zero-Based

n/a

**Beginning of Workpaper Sub Details for
Workpaper Group 00811F**

Area:	SMART METER PROGRAM
Witness:	Rene F. Garcia
Budget Code:	00811.0
Category:	A. AMI Balancing Account - Capital
Category-Sub:	1. Systems Operations
Workpaper Group:	00811F - AM - Meter Installs Labor/Non-Labor
Workpaper Detail:	00811F.001 - AM - Meter Installs Labor/Non-Labor

In-Service Date: Not Applicable

Description:

AM - Meter Installs Labor/Non-Labor

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	2,421	0	0
Non-Labor	1,683	0	0
NSE	0	0	0
Total	**4,104**	**0**	**0**
FTE	34.6	0.0	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
00811G - AM - Data Collector Unit Poles Labor/Non-Labor

Area:	SMART METER PROGRAM
Witness:	Rene F. Garcia
Budget Code:	00811.0
Category:	A. AMI Balancing Account - Capital
Category-Sub:	1. Systems Operations
Workpaper Group:	00811G - AM - Data Collector Unit Poles Labor/Non-Labor

Summary of Results (Constant 2016 $ in 000s):

Forecast Method		Adjusted Recorded					Adjusted Forecast		
Years		2012	2013	2014	2015	2016	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	0	0
Non-Labor	Zero-Based	0	0	0	0	0	373	228	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	373	228	0
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Business Purpose:

This budget category records expenditure for non-labor costs associated with the purchase of poles for the DCUs as well as the associated taxes. These poles are used whenever attachments to existing poles are not an installation option for the Network Deployment team.

Physical Description:

The cost of poles represents 156 metal poles purchased for 2017 DCU installations. This cost includes material, shipping, taxes and other fees.

Project Justification:

These costs are necessary to maintain and manage the systems in place for the AMI project and on-going operations.

Note: Totals may include rounding differences.

Area:	SMART METER PROGRAM
Witness:	Rene F. Garcia
Budget Code:	00811.0
Category:	A. AMI Balancing Account - Capital
Category-Sub:	1. Systems Operations
Workpaper Group:	00811G - AM - Data Collector Unit Poles Labor/Non-Labor

Forecast Methodology:

Labor - Zero-Based

Estimate for labor is based on current budget plan for AMI final deployment year 2017. These costs are covered by the AMI Balancing Account. Capital costs for the on-going Advanced Meter Operations (AMO) group will be forecasted in other witness areas for TY 2019.

Non-Labor - Zero-Based

Estimate for non-labor is based on current budget for final deployment year 2017. These costs are covered by the AMI Balancing Account. Capital costs for the on-going Advanced Meter Operations (AMO) group will be forecasted in other witness areas for TY 2019.

NSE - Zero-Based

n/a

**Beginning of Workpaper Sub Details for
Workpaper Group 00811G**

Area:	SMART METER PROGRAM
Witness:	Rene F. Garcia
Budget Code:	00811.0
Category:	A. AMI Balancing Account - Capital
Category-Sub:	1. Systems Operations
Workpaper Group:	00811G - AM - Data Collector Unit Poles Labor/Non-Labor
Workpaper Detail:	00811G.001 - AM - Data Collector Unit Poles Labor/Non-Labor

In-Service Date: Not Applicable

Description:

AM - Data Collector Unit Poles Labor/Non-Labor

Forecast In 2016 $(000)			
Years	**2017**	**2018**	**2019**
Labor	0	0	0
Non-Labor	373	228	0
NSE	0	0	0
Total	**373**	**228**	**0**
FTE	0.0	0.0	0.0

Note: Totals may include rounding differences.