ORA DATA REQUEST
ORA-SCG-DR-025-DAO
SOCALGAS 2016 GRC – A.14-11-004
SOCALGAS RESPONSE
DATE RECEIVED: DECEMBER 10, 2014
DATE RESPONDED: DECEMBER 29, 2014

Exhibit Reference: SCG-4, Gas Distribution O&M and Capital Expenditures

Subject: Measurement and Regulation Devices, Regulators

Please provide the following:

1. Referring to page FBA-128 of the testimony, please provide support for the proposed replacement of 10,030 regulators in 2016. Please explain of how SoCalGas determined this number and include a copy of any and all analyses/assessments/studies performed to determine the number of regulators to be replaced in 2016.

SoCalGas Response 01:

SoCalGas' reasoning for purchasing the curb regulators was to reduce installation costs by including aging curb regulator replacements at the time of curb meter installations. This avoids a return trip at a later date to replace the regulator, when it would cost more to replace the older regulators under a failure or secondary replacement program, instead of when we are already there for the planned meter replacement. This is discussed more in the response to Question 7.b. below.

Secondly, the curb regulators were purchased in a special, scheduled production run of over 100,000, which helped drive the price of the regulators down from the continued small ad-hoc purchased volumes each year. This special price was used to forecast the capital cost associated with purchasing these curb regulators.

Please see the table below for curb regulator replacement analysis.

ORA DATA REQUEST
ORA-SCG-DR-025-DAO
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SOCALGAS RESPONSE
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SoCalGas Response to Question 1, Continued:

AMI Deployment Years	Curb meters to be replaced as part of AM (Application data-total only) Note 1	Ratio curb regulator to meter changeouts-2013 empirical results applied to all years. Note 4	Curb regulators replaced (2103=actuals, 2014-2017 -updated to support empirical replacement ratio) Note 2	Regulator Changes-Funded via AM Filing (assumes Filing change-out replacement count exceeded by 12/31/15) Note 3	Regulator changes not funded under AM program Application and approval Note 7
2013 - 2017	201,536	0.6095	122,828	100,768	22,060

Year	GRC Request for Incremental Regulators (2016-2017)	Less average curb meter replacements in prior years Note 8	Remainder (regulator installations) for CS O&M Funding in 2016/2017
2016	11,030	1,000	10,030
2017	11,030	1,000	10,030
TOTALS	22,060	2,000	20,060

NOTES:

1 AM program originally budgeted for replacement of 201,536 curb meters (Labor and NL)

2 AM Application assumed regulator changes on 50% of all curb meter changes

3 AM program originally budgeted for replacement of 100,768 curb regulators (labor and NL)

4 2013 results show application of Gas Engineering regulator inspection criteria yields 61% change-out ratio

5 Application of 61% change-out ratio means 122,828 regulator changes

7 The labor for the 22,060 additional regulator changes in 2016 and 2017 is included in the GRC labor funding request for Customer Services Field (Witness Sara Franke)

8 Subtract normal curb regulator change-outs (PMC/RMC) prior to AM program work 2013.

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2. If SoCalGas completed the replacement of the identified 10,030 regulators in 2016 as proposed on page FBA-128, does SoCalGas plan to continue its proactive replacement effort in subsequent years? If yes, please and identify the number of regulators it plans to replace each year for 2017-2018, and provide the reason(s) for the continued proactive replacements beyond the test year and include any and all supporting documents (any and all analyses/assessments/studies performed) and calculations SoCalGas relied on to determine the continued proactive replacement effort.

SoCalGas Response 02:

SoCalGas will continue to replace curb regulators at the same rate (10,030 per year) through 2017 via its Advance Metering Infrastructure installation site visits. In 2018, the rate of curb regulator replacements will revert to pre Advanced Meter units (2011) of 1,000 per year or less (replacements due to routine meter work and miscellaneous call-out activity).

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3. Please identify the number of regulators, by age and by type of material, currently in service as part of SoCalGas' distribution system.

SoCalGas Response 03:

SoCalGas does not track regulators by age and by type of material in its distribution system. SoCalGas is currently evaluating alternatives for tracking these regulators.

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4. How many of the 10,030 regulators are identified for proactive replacement due to age versus being susceptible to corrosion?

SoCalGas Response 04:

The criteria for these regulator replacements are the same as for SoCalGas Advanced Meter curb regulator replacements. These are regulator quantities which meet the Advanced Meter replacement criteria, but for which SoCalGas has not previously sought replacement funding. This regulator replacment criteria was crafted to address a combination of age, corrosion mitigation/avoidance, and leveraging of economies of scale in regulator purchases; as well as logistics/efficiency in having an employee physically at the curb meter set with the meter removed, a sometimes arduous task at a curb location. Detailed survey and replacement work conducted since the implementation of our Advanced Meter replacement suggests there were 20,000+ more curb regulators meeting replacement criteria than originally forecasted. The 10,030 regulators are targeted as regulators that were/are to be in excess of 30 years of age at the end of the Advanced Metering Infrastructure Program implementation in 2017. They are of varying make and models. The regulators were and are to be specifically replaced if they were not either a cast iron Fisher S402Y or Itron B42R cast iron casing model. Both of these criteria result in replacing curb regulators greater than approximately 30 years of age by 2017.

This identification/change-out criteria, referenced in the separately provided confidential customer service bulletin titled ORA-SCG-DR-025-DAO_Q4_CONFIDENTIAL.pdf, serves two mutual ratepayer and SoCalGas interests:

- It provides for easy identification for field personnel on which regulators to replace and remove during the AMI program, when personnel are mobilized and staged for regulator replacement by virtue of changing out the gas meter.

- It provides for regulators older than 30 years to be replaced by 2017. These are regulators that would otherwise require replacement in the 2018-2028 timeframe, either through fragmented replacement at failure (under special callout) or through a secondary program as the families of regulators fail over that same time period.

ORA-SCG-DR-025-DAO_Q4_CONFIDENTIAL.pdf should be treated as ***CONFIDENTIAL PURSUANT TO P.U. CODE SECTION 583 & G.O.66-C***.

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5. Provide the analyses/assessments/studies SoCalGas performed to determine some of the 10,030 regulators are susceptible to corrosion.

SoCalGas Response 05:

SoCalGas' curb regulator replacement program is partially based on direct historical observation of curb regulators removed under routine meter changeout, where the regulator bodies are not fabricated from 100% cast iron. It is SoCalGas' experience that curb meters and regulators are exposed to higher levels of moisture due to their location and subject to associated galvanic corrosion in greater frequency and magnitude than above ground meter sets, especially where components are anodized steel/aluminum and not cast iron. Cast iron curb meters and regulators are designed for this application, specifically to resist corrosion in wet and ground-contact applications. This replacement will provide for smaller curb regulators which are not designed with a complete cast iron body and which are over 30 years old will be changed out.

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6. Is it SoCalGas' policy to proactively replace regulators once they reach their life expectancy of approximately 30 years? If yes, please provide a copy of SoCalGas' regulator replacement policy.

SoCalGas Response 06:

SoCalGas' bulletin regarding curb meter and regulator replacement noted in the response to Question 4 results in de facto replacement of regulators with ages in excess of 30 years being replaced by 2017.

SoCalGas also targets replacement of Reliance K regulators when identified during other meter change-out work which results in the prescriptive replacement of regulators older than 30 years.

Please see the separately provided document titled ORA-SCG-DR-025-DAO_Q6_CONFIDENTIAL.pdf. This document should be treated as ***CONFIDENTIAL PURSUANT TO P.U. CODE SECTION 583 & G.O.66-C***.

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7. Has SoCalGas performed any proactive replacement of regulators in the past 10 years? If no, please so state and explain why SoCalGas proposes in this GRC to begin proactively replacing aging regulators and those susceptible to corrosion. If yes, please so state and provide the following information:
    a. Identify the number of regulators replaced by year and the annual expenses, including the regulator purchase costs;
    b. The reason/rationale for the proactive replacement of these regulators;
    c. A copy of any and all assessments performed to determine the effect on public safety risks due to the proactive replacements of regulators due to age and or susceptibility of corrosion.

SoCalGas Response 07:

This question raises issues that extend to both Gas Distribution and Customer Services Field. Regulator replacement programs are typically established by Gas Distribution, and Gas Distribution purchases all regulators. Customer Services Field plans and incurs the labor costs associated with small regulator change-outs and Gas Distribution does the same for large regulators. As such, SoCalGas' response has been bifurcated between Customer Services Field (Witness Sara Franke) and Gas Distribution as follows:

- Response to 7 was prepared by Gas Distribution;
- Responses to 7.a. and 7.b. were prepared jointly by the Gas Distribution witness (Frank Ayala) and the Customer Services Field witness (Sara Franke);
- Response to 7.c. was prepared by Gas Distribution.

Gas Distribution tests the larger-sized regulators annually or at specific intervals. Based on these tests results, we rebuild or replace individual regulators as needed.

For information on historical proactive replacement of small regulators, please refer to the response to 7.a.

The need for the curb regulator proactive replacement effort is discussed in on page FBA-28 of Exhibit SCG-04:

> This effort will replace an incremental number of regulators susceptible to corrosion or that have exceeded their life expectancy of approximately 30 years, with more resilient cast iron regulators. These tougher new regulators will support SoCalGas' commitment to proactively take action to mitigate leakage, thus reducing associated public safety risks.

As discussed in the responses to Questions 1 above and 7.b. below, these replacements are scheduled to start in 2016 in order to correspond with curb meter replacements.

SoCalGas Response 07:-Continued

a. SoCalGas' Customer Services Field (CSF) organization has been proactively replacing regulators without overpressure protection since the early 1980s, in conjunction with meter change work. Such regulators are also replaced when a customer's gas service is temporarily shut off for fumigation work. In addition to this ongoing activity, SoCalGas was authorized to replace additional regulators without overpressure protection in its 2008 and 2012 General Rate Cases. The 2008 and 2012 GRC-authorized replacements are identified in the table below as Non-OPP (GRC authorized). SoCalGas does not specifically track labor expenses for this activity, as regulator replacements are usually incremental to other activity. The volume of regulator replacement activity broken-out by those with/without overpressure protection is also shown below.

SCG CSF Gas Regulator Changes Jan 2009 - Nov 2014

	2009	2010	2011	2012	2013	2014 (Nov YTD)
Non-OPP (Normal Activity)	39,503	39,396	22,784	16,927	14,894	11,931
Non-OPP (GRC-Authorized)	13,554	11,080	4,475	11,170	-	-
OPP	13,481	14,661	14,907	15,240	23,083	24,338
Total	66,538	65,137	42,166	43,337	37,977	36,269

In the past 10 years, CSF has not proactively replaced regulators based on age or susceptibility to corrosion.

b. Curb meters and regulators are installed in a below ground vault. As such, they are more difficult to work on than their above-ground counterparts. As all curb meters will be replaced during the installation of Advanced Metering Infrastructure (AMI) technology, SoCalGas believes it is prudent to replace the pressure regulator at the same time. The incremental time needed to replace these older regulators during this meter change is much less costly than it would be to replace the regulator in a separate trip at some future date.

SoCalGas Response 07:-Continued

c. SoCalGas has performed no such system assessments. Experienced Subject Matter Experts have determined that over time regulators in below ground vaults corrode due to excessive moisture accumulation. Internal parts on regulators that corrode do not perform well. When a regulator does not perform as designed, it allows pressures to enter the premise higher than the premise is designed to receive, which is a safety hazard. In addition, external corrosion shortens the useful life of the regulators. This is another reason we are replacing these regulators.