DRA DATA REQUEST
DRA-SCG-072-KCL
SOCALGAS 2012 GRC – A.10-12-006
SOCALGAS RESPONSE
DATE RECEIVED: APRIL 14, 2011
DATE RESPONDED: APRIL 29, 2011

Exhibit Reference: SCG-05 and SCG-05-CWP

Subject: Gas Engineering and Transmission

Please provide the following:

1. Now that the 2010 recorded data are available, please provide recorded data for each category of capital expenditures (see Table SCG-RCK-17 on Pages RKS-70 and -71 of direct testimony Exhibit No. SCG-05) in 2009 dollars for Year 2010. Please provide a list of projects with expenditures over $500,000 in 2009 dollars for each category.

SoCalGas Response 01:

Note: SoCalGas assumes the table referred to in Question 1 is SCG-**RKS**-17. The following are the adjusted/ recorded 2010 capital costs for each category of capital shown in Table RKS-17..

Category Description	2010 Adjusted Recorded in 2009 $1,000's
1. 276 – Pipeline Integrity - Distribution	15,164
2. 277 – Distribution Integrity Management Program (DIMP)	0
3. 3X1 – Transmission Pipelines – New Additions	12,727
4. 3X2 – Transmission Pipelines – Replacements and Pipeline Integrity Program (PIP)	39,102
5. 3X3 – Transmission Pipeline – Relocations - Freeway	44
6. 3X4 – Transmission Pipeline Relocations – Franchise/Private	4,823
7. BC 3X5 - – Gas Transmission – Compressor Stations	2,803
8. BC 3X6 – Gas Transmission Pipelines – Cathodic Protection	2,246
9. BC 3X8 - – Gas Transmission – Meter and Regulator	6,985
10. BC 3X9 – Gas Transmission – Auxiliary Equipment	1,498
11. BC 6X7 - – Gas Transmission – Pipeline Land Rights	2
12. BC 730 – Gas Transmission – Laboratory Equipment	561
13. BC 736 – Gas Transmission & Storage – Capital Tools (sum of BCs 736 and 728)	297
14. BC 1001 – Gas Storage – S&E Direct Overheads	421
15. BC 1002 Gas Transmission – S&E Direct Overheads	943
16. BC 01100 – Gas Transmission – Coastal Region Conservation Program (recorded in BC 903)	70
17. BC 00399 – Sustainable SoCal Program	0

Response to Question 1 (Continued)

Projects having recorded costs in 2010 of $500k or more are shown in the following table:

Budget Code	Work Order	Description	2010 Adjusted Recorded (2009 $1,000's)
276	80614	P:APACHE TRAIL & BONITA	668
	97064	(TIMP) L 38-504 REPLACE PIPE & RETROFIT	3,973
	97077	(TIMP) L 38-202 REPLACEMENT-BAKERSFIELD	1,435
	97086	P1: SL 36-1008A DPIT PROJECT	654
	97100	(TIMP) SL 38-528 HCA REDUCTION	578
	97158	(TIMP) SL 38-959 REPLACEMENT	830
	97177	(TIMP) SL 45-163 ASSESSMENT AT CASING	671
	97178	(TIMP) SL 38-366 HCA REDUCTION/ELIMINATE	625
	97203	TIMP BLOOMFIELD AVE STA FE SPRGS SL42-12	532
321	96713	NO./SO. TRANSMISSION SYSTEM INTERCONNECT	10,933
312	96773	L 407 & 3003 PIPE EXPOSUR REPAIR-SUL CYN	5,504
	97010	LINE 325 RETRO & ILI DUAL DIA 16" & 20"	4,332
	97039	TIMP L 1017 RETROFIT & INTRNAL INSPECT	3,659
	97082	TIMP - L -235 NEWBERRY TO QUIGLEY	4,098
	97106	L-2002 SPAN REPLACEMNT - RIO HONDO RIVER	1,890
	97155	(TIMP) LLNE 1185/4002 RETROFIT FOR ILI	1,570
	97183	(TIMP) L-3000 RETROFIT & INSPECT	14,547
	97212	(TIMP) SL-324 SAUGUS STN & CENTER RD STN	658
304	95197	JEFFREY ROAD GRADE SEPARATION L1018 REL	877
314	90066	LINE 1018 RELOCATION AT OSO PARKWAY	863
	95062	RELOC L1013 F/PLACENTIA GRADE SEPARATION	1,017
335	90085	VENTURA STATION UNIT CONTROLS UPGRADE	1,378
316	90027	PISGAH MTR STAT - SOUTHWEST GAS EXCHANGE	1,006
318	97176	(TIMP) PRESS LIMIT STATN (190TH & GREEN)	2,382
	96677	BLYTHE ENERGY MSA PROJECT	727
730	50958	ENGINEERING - CAP TOOLS	561

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2. Does SoCalGas have to file a CPCN application for any of its gas engineering and transmission capital projects in the years 2009 to 2012? If it does, please list the projects, the costs of each project, the status of each project, and the status of each CPCN application.

SoCalGas Response 02:

SoCalGas is not required to file a CPCN application for any of its capital projects scheduled for 2009 through 2012.

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3. Please describe in detail the "pigging" process during an inline inspection of the SoCalGas natural gas pipelines.

SoCalGas Response 03:

An in-line inspection (ILI) of a pipeline is performed, progressively, using a number of different types of inspection tools (pigs) each with different purposes and capabilities, culminating in the use of an internal electronic device "smart pig". Each type traverses internally along the route of the pipeline to collect information used to assess the integrity of the pipeline. Prior to the insertion of any tools, however, there are a number of activities that must be performed in order to ensure a successful inspection.

Preparation for Pigging

Prior to the commencement of an ILI project a comprehensive data research and verification effort is undertaken to identify all of the characteristics of the pipeline and its appurtenances. This effort serves to identify any portion of the pipeline that would impede the passage of the tools. Some early pipelines were not designed to accommodate these inspection tools, therefore retrofitting must be performed along the pipeline route to allow for sufficient clearance for the tools during inspection. A typical retrofit may include the replacement of valves that allow inspection devices to traverse internally, insertion of tees with bars and the change-out of bends and other fittings that may impede the progress of the inspection tool.

Most retrofit activities require engineer design work, appropriate permit approvals, site preparation and traffic control, heavy equipment excavation and shoring, pipe and fitting acquisition and installation along with cranes and welders, external coating application, and returning the site to "as-found" conditions. This same level of work is necessary on every retrofit site required along the pipeline which can vary from a few to dozens or more.

Also required are the installations of the launcher and receiver assemblies at either end of the pig run. These facilities allow the various tools to be inserted and removed from the pipeline while it is under pressure and include an array of additional pipe, fittings and valves for operation. A filter/ separator system is usually installed on the receiver end to clean the gas of particles prior to being returned to the pipeline. The level of effort and activities involved with these installations are very similar to those required above for retrofitting.

Pipeline cleaning and inspection

Before the electronic smart tool can be safely introduced to the line, a number of cleaning and sizing tools must be used in preparation. Each pig is equipped with an electronic transmitting device which aides in the manual tracking of the pig from above-ground to determine its location at any point during the run. This is achieved by the installation or identification of

Response to Question 3 (Continued)

Above Ground Markers (AGM) which are identified and located via GPS coordinates at pre-determined locations along the pipeline. These points serve a number of purposes. As the pigs pass these points the pigs speed is calculated and gas flow may be modulated to keep the tool speed within desired specifications. They also serve as data alignment points and ease the identification of anomaly locations.

The various types of pigs SoCalGas uses include (in sequential order):

Foam pigs - Serve as the first level of cleaning by pushing out large debris while traversing the pipeline and will indicate if there are any protrusions into the pipe by showing ripping or tearing when they are examined upon removal. All debris is accumulated in the receiver and are examined and removed for testing or disposal. Multiple foam pig runs are usually required until enough confidence is achieved for the next type of pig.

Squeegee or Disc pigs – These are more robust than the foam pigs and provide firmer contact with the inner wall of the pipeline and literally scrape the wall as it moves along bringing with it any foreign objects, dust, liquids, etc. All debris is accumulated in the receiver and are examined and removed for testing or disposal. Multiple squeegee or disc pig runs are usually required before the next type of pig is used.

Brush pig – These pigs are equipped with a series of stiff brushes that scuff along the pipe wall to loosen and remove any surface dust or scale. They are outfitted with a squeegee or disc to collect the debris it dislodges and remove to the receiver. Multiple runs are usually required.

Magnetic pig – Equipped with high powered magnets to attract and remove any remaining metallic particles that may interfere with the electronic sensors of the smart tool. Multiple runs are usually required for this tool.

Gauge pig – This pig is equipped with gauge plates designed specifically for the size of the final tools. These gauge plates will deform as it encounters any irregularities in the pipe geometry along the route. Once it is removed, it is thoroughly examined to determine if there are any remaining obstructions that must be addressed prior to using the caliper and smart pigs. Multiple runs may be required.

Response to Question 3 (Continued)

Caliper pig – A Caliper, also known as a Geometry tool, is a precision instrument that serves to determine the ovality of a pipeline. This tool is also used as the final go/ no-go indication before the smart tool is introduced to the pipeline. This tool can measure the "roundness" of the pipeline to determine areas of crushing or other deformations as well as:

1. Deformation depths greater than 2% of the diameter of the pipeline;
2. The orientation of the deformation by o'clock positioning;
3. Significant bends (with angle and orientation noted), Example: 45 degree bend right;
4. Significant changes in pipe diameter or geometry (ovality, bulging, etc); and, Identification of each girth weld.

The caliper pig is also sized specifically for the smart tool and may require multiple runs.

Inertial Navigation System. (INS) – An Inertial Navigation System is a device that is inserted into either the Caliper pig or a smart pig. The INS measures, maps and records the pipeline in 3D, giving precise position and profile data at the highest resolution. It uses the latest commercial high-grade technologies for autonomous navigation, positioning and altitude determination. The INS data collected is later processed into Global Positioning System (GPS) satellite data set for the entire length of the pipeline run. The GPS data provides spatial information about the pipeline environment and can be used to determine accurate pipeline topography.

Smart pig - The type of information gathered by smart pigs includes the pipeline diameter, curvature, bend strain, linear indications, as well as corrosion or metal loss. These pigs utilize two methods to gather information about the condition of the pipeline: magnetic flux leakage (MFL) and ultrasonic transduction (UT). MFL inspects the pipeline by sending magnetic flux into the walls of the pipe, detecting leakage, corrosion, or flaws in the pipeline. Ultrasonic inspection directly measures the thickness of the pipe wall by using ultrasonic sounds to measure the amount of time it takes an echo to return to the sensor. SoCalGas primarily uses MFL pigs but does use UT as necessary.

During any of the pig runs, if there are any indications that there are remaining obstruction in the line it must be located and removed by repair or replacement prior to continuing the inspection with subsequent pigs.

After the entire cleaning, sizing and smart pig inspection process has been successfully completed, the data is downloaded from the tool reviewed for completeness. The SoCalGas project engineer and the Vendor Analyst will review the tools performance and data to determine if it meets SoCalGas' acceptance criteria. If there are irregularities or missing data due to wheel skips or other causes, the smart tool will be re-run until acceptable data is achieved. If the tool is damaged during the run, the vendor's field technician will repair the tool and a new run will be performed. Upon completion of a successful in-line inspection, the pigging-inspection portion of the pipeline is considered complete. SoCalGas' field operation personnel will remove all

Response to Question 3 (Continued)

temporary equipment and at the pipeline and launcher and receiver sites are returned to their new normal operating state.

The data collected by the inspection is then reviewed and analyzed by the contractor. Their report preparation typically takes about 60 days to complete. The report will be used to help establish required excavation locations for data verification and anomaly remediation