



Pete Dietrich
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August 11, 2014

Mr. Paul Clanon
Executive Director
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, Ca 94102

SUBJECT: Southern California Edison Company's Response to Commission Staff's Hazard Analysis and Mitigation Report regarding Aldyl A Polyethylene Gas Pipelines

Dear Mr. Clanon:

Introduction:

Southern California Edison Company Catalina Gas (Catalina Gas) respectfully submits its response to Commission staff's Hazard Analysis and Mitigation Report regarding Aldyl A Polyethylene Gas Pipelines (Report), which was distributed on June 11, 2014. Catalina Gas supports Commission staff's focus on reducing risk associated with potential gas pipeline hazards. Catalina Gas also believes that it is appropriate to include its small Santa Catalina Island petroleum gas pipeline distribution system (Catalina Gas System) as part of Commission staff's Aldyl A gas pipeline hazard analysis. We appreciate the open dialogue we have had with staff on these issues. Catalina Gas looks forward to continuing this open dialogue with the Commission in its review of our response and in its ongoing safety efforts to reduce risks associated with other gas pipeline hazards included in Commission staff's March 2012 report, which identified 17 potential gas pipeline hazards that impact public safety.

Background:

The Catalina Gas System serves approximately 1,300 customers in the City of Avalon on Santa Catalina Island, California and is operated by only 12 personnel, including a superintendent, two foremen, five system mechanics, one utilityman, two technical specialists, and one administrative assistant, who also split their time operating SCE's Catalina Water System. Liquefied petroleum gas (LPG) is stored and vaporized at its Catalina Utilities Center (CUC) facility. A petroleum gas and air mixture (a surrogate for natural gas) is distributed through approximately 9.5 miles of main pipeline segments and approximately 990 service laterals, located completely within the city of Avalon (whose total geographical area is less than 3 square miles). The distribution system pressure for the petroleum gas/air mixture is generally 6 pounds per square inch (psi) with a typical heating value of 1,350 British thermal units (BTUs). The maximum allowable operating pressure (MAOP) for the small Catalina Gas System is 10 psi. The Catalina Gas System's base rate revenues in 2013 were approximately \$1.5 million.

As the Report indicates, the Catalina Gas System operates at low pressures and is small in size, which significantly reduces the likelihood of occurrence of some types of Aldyl A pipe failures and mitigates against potential safety deficiencies associated with imperfect Aldyl A pipe records. Notwithstanding the low operating pressure and small size of the Catalina Gas System, Catalina Gas is committed to operating a safe, compliant and reliable gas distribution system while balancing the need for just and reasonable cost-based rates for its approximately 1,300 customers. Catalina Gas also supports efforts to implement improvements in its various plans and programs (e.g., Gas Safety Plan and Distribution Integrity Management Program), standard practices, surveillance and testing activities and other risk control measures that are commensurate with the size, relatively low risk, and unique characteristics of its Catalina Gas System. Catalina Gas' responses to the Report's recommendations and questions apply these important principles and are presented below.

Catalina Gas Responses to Report Recommendations:

This section provides Catalina Gas' responses to each of the seven recommendations included in the Report. Staff's recommendations are stated first followed by Catalina Gas' response. Where Catalina Gas' response applies to multiple staff recommendations, they are stated sequentially, followed by Catalina Gas' response.

Report Recommendations Number 1 and Number 2:

1. Operators should develop a more robust asset knowledge and material traceability program on their gas distribution assets.

2. Operators should develop a strategy for better integrating supply chain information (e.g. resin type, manufacturing date, lot number, and other manufacturing data that are typically available during the purchase of materials).

Catalina Gas' Response:

Catalina Gas has taken steps to limit potential risks associated with its asset and material information. Since 2010, Catalina Gas has been incorporating its paper-based records into its SAP enterprise asset management information system (SAP) to develop better documentation and traceability of its operation and maintenance requirements. Transcribing paper-based records into electronic format is an ongoing effort. For example, while preparing responses to Commission staff's data requests as part of their Aldyl A hazard assessment, Catalina Gas extracted specific asset information from its paper-based records (e.g., Log Book, Map Book, Leakage & Inspection Reports) for future input into SAP. An analyst went through each hand-drawn Map Book entry for the Catalina Gas System, documenting all locations specifically identified as containing Aldyl A pipe and inputted these into an electronic format. At the same time, Catalina Gas created another table of all the known non-Aldyl A polyethylene (PE) locations throughout its distribution system. Catalina Gas is also in the process of building a "Functional Location" hierarchy in SAP for its gas distribution system. A "Functional

Location” hierarchy is where known asset information, such as main pipeline, service laterals, valves, and meters, can be stored in SAP. SAP also has the capability to retain certain material characteristics, such as material type, manufacture date, and resin type, and these characteristics can be attributed to specific “Functional Locations” in SAP. This “Functional Location” process is in its early stages and Catalina Gas plans to assess making additional enhancements that could improve its asset knowledge and material traceability as this process continues.

Moreover, recently Catalina Gas sent two samples of Aldyl A pipe in its gas distribution system to a lab (Jana) for testing and analysis. One of the samples was taken from a development (Sol Vista) known to comprise the vast majority (approximately 70 percent) of Aldyl A pipe within the gas distribution system. The second sample, in another location, was the result of an opportunistic removal of Aldyl A pipe through routine operations and maintenance. The purpose of the testing was to determine the material vintage of the Aldyl A pipe sections, installed in the 1970s, and determine whether or not the samples have low ductile inner wall (LDIW). The final report from Jana indicated that both samples “do not appear to have a low ductile inner wall (LDIW).” Additionally, one of the samples was identified as likely being produced in Tulsa, Oklahoma on September 12, 1974 and both samples were likely produced from DuPont’s Alathon 5043 material, after the time period LDIW pipe was manufactured. Catalina Gas will continue to send selected samples of material, known to have potential safety risks, in its distribution system out for testing to improve its material traceability.

Due to the small size and low growth rate of the small Catalina Gas System, material orders are typically small and infrequent. Therefore, many material orders are placed by local staff on Catalina and submitted directly to vendors using non-Purchase Order (PO) processes. Catalina Gas is currently working with its procurement group to identify strategies of integrating supply chain information into SAP. This is being done by building the “Functional Location” framework of mains and services, then assigning customer meters and isolation valves to the streets on which they are located. Information gathered along the supply chain process can be built into this “Functional Location” hierarchy as a possible future enhancement. Catalina Gas will also assess this possible enhancement as this process continues.

Catalina Gas will continue to make incremental improvements in its asset knowledge, material traceability, and integration of supply chain information that are commensurate with the small size, relatively low risk, and unique characteristics of its Catalina Gas System.

Report Recommendation Number 3:

3. Where feasible, operators should make use of opportunistic identification to determine whether an exposed pipe segment is of Aldyl A or some other materials and, if it is Aldyl A, whether the pipe has LDIW characteristics whenever sections are cut out.

Catalina Gas' Response:

In response to the risks of Aldyl A pipe known to exist within its gas distribution system, Catalina Gas previously revised its standard practices to be more proactive in assessment and mitigation measures. For example, the standard practice for gas mains and service lines now calls for PE pipe known to have LDIW characteristics or prone to brittle-like cracking to be evaluated for replacement whenever observed in the field. Additionally, the standard practice for exposure of buried pipeline now requires a "Leakage and Inspection" form to be filled out. This allows for the opportunistic collection of information on pipeline and backfill conditions. If a section of pipeline is observed as damaged or deteriorating, or if backfill material is observed as unacceptably rocky, that section will be replaced, shaded with sand and properly backfilled. Further revisions to Catalina Gas' standard practices are planned to include a field test (reverse-bend test) for any Aldyl A pipe opportunistically replaced during routine operations and maintenance.

In addition to the ongoing revision of our standard practices, and as mentioned above, Catalina Gas recently removed two sections of Aldyl A pipe, from two separate locations within its gas distribution system for laboratory analysis. This laboratory analysis has shown that neither of the two pipeline segments appears to have LDIW. Furthermore, neither sample showed obvious signs of micro-cracking of the surface of the inner wall upon bend back.

Catalina Gas' additional revisions to its standard practices to include a field test for Aldyl A pipe opportunistically replaced in the field and continued practice to send selected samples of Aldyl A pipe found in new field locations to a lab for analysis will provide improved risk mitigation for its small Catalina Gas System.

Report Recommendation Number 4:

4. Operators should react expeditiously to manufacturer warnings and PHMSA safety advisories.

Catalina Gas' Response:

Catalina Gas currently subscribes to the Washington Pipeline Letter Pipeline Safety Regulations (CFR) Amendment Update Service. This service provides Catalina Gas with all amendments, alert notices, and advisory bulletins for consideration in the continuous monitoring and mitigation of safety issues in the pipeline community. The service provides updates for inclusion into Catalina Gas' compliance files. Catalina Gas maintains a binder containing all amendments, alert notices, and advisory bulletins issued by the United States Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA). The PHMSA website is also checked periodically for newly-issued safety advisories and to research past advisories. This is not done on any predetermined interval and there is no formal procedure currently in place to review either the Washington Pipeline Letters or PHMSA safety advisories.

Typically, when a safety advisory is received it is reviewed by the superintendent, technical specialist, and a foreman for applicability to the small Catalina Gas System.

To address the current lack of a formalized process for receiving, reviewing, and possibly reacting (if applicable) to safety advisories, Catalina Gas will assess the need to either revise an existing standard practice or develop a new standard practice to ensure that all safety advisories are given adequate consideration.

Report Recommendation Number 5:

5. Operators should re-examine their risk assessment and mitigation strategies to ensure they will be replacing the at-risk pipes at a sufficient rate to mitigate the risk associated with LDIW Aldyl A pipes dues to squeeze-offs and to pre-1983 non-LDIW pipes due to rock impingement.

Catalina Gas' Response:

The Catalina Gas System is small, with less than 10 miles of main pipeline, fewer than 1,000 service laterals, approximately 1,300 customers, a service area of less than 3 square miles, a typical operating pressure of 6 psi, and a MAOP of 10 psi. Regardless of system statistics, safety remains a primary focus of Catalina Gas. Practices are already in place to inspect any section of pipeline that is exposed during routine operations and maintenance. Additionally, any Aldyl A pipe encountered in the field is opportunistically replaced, including Aldyl A pipe that has been squeezed-off. Catalina Gas also performs an annual leak inspection survey, not exceeding 15 months between inspections, which consists of sampling for propane gas leaks along the main and lateral service lines at manholes, cracks in pavement and sidewalks, valve cans, and other locations that allow for leak detection through the ground surface. Moreover, from October 2012 through March 2014, Catalina Gas installed approximately 2,300 bar holes along its main pipeline to create additional sampling points for its leakage surveys.

Catalina Gas' existing procedures to identify and inspect pipeline when exposed, to opportunistically replace any encountered Aldyl A pipeline segments and to regularly monitor for leaks demonstrates our commitment to safety and risk mitigation, even in the context of Catalina Gas' relatively low-risk propane gas distribution system. Catalina Gas is confident that the additional steps outlined in the responses above and those presented below will further improve safety margins and the risk mitigation of potentially at-risk pipe.

Given its small size, existing standard practices and recent lab analysis, Catalina Gas is not proposing additional changes in its operations and maintenance activities for risk associated with LDIW Aldyl A pipes due to squeeze-offs and to pre-1983 non-LDIW pipes due to rock impingement at this time, but rather will continue to implement the processes and procedures already in place as well as the planned improvements discussed herein.

Report Recommendation Number 6:

6. Operators should, if not already doing so, explicitly consider the impacts of at-risk Aldyl A pipes in their next risk assessment and mitigation strategies provided to the Commission.

Catalina Gas' Response:

The impacts of at-risk Aldyl A pipe within the Catalina Gas System are a primary consideration for Catalina Gas. We have previously revised our standard practices to include a section on the opportunistic replacement of Aldyl A pipe whenever encountered during routine operations and maintenance. Catalina Gas has also sent multiple Aldyl A pipe samples to a lab for analysis, the results of which do not indicate the presence of a LDIW. Catalina Gas intends to continue the practice of opportunistic removal and testing of Aldyl A pipe as a mechanism for collecting new information and for monitoring potentially at-risk segments. As part of the opportunistic replacement and inspection process, Catalina Gas also replaces any observed substandard backfill materials around at-risk pipes. This process includes those sections of pipe exposed during routine operations and maintenance.

Based on information gathered through opportunistic replacement and testing, PHMSA safety advisories, in preparing responses to previous Commission staff data requests, and the Aldyl A Hazard Analysis and Mitigation Report, Catalina Gas intends to update its Gas Safety Plan. The Gas Safety Plan will be revised to reflect known hazards (Aldyl A pipe), regulatory changes, and incorporate information gathered through routine inspection and laboratory analysis. Safety is and will continue to be the primary focus of Catalina Gas, and we plan to update and revise our Gas Safety Plan, as needed, to reflect changing regulatory requirements and industry best practices.

Report Recommendation Number 7:

7. When acquiring systems, operators should ensure relevant pipeline records are transferred as a condition for final acquisition of a system.

Catalina Gas' Response:

SCE is currently negotiating with a potential buyer to sell its Catalina Gas System and Catalina Water System. No purchase agreement has been executed yet. If the sale process continues to move forward, Catalina Gas' relevant pipeline records will be transferred to the new owner once an agreement has been executed and the Commission approves the sale. The transfer of relevant Catalina Gas pipeline records will be added as a condition in any sale agreement for the Catalina Gas System.

Catalina Gas' Responses to Report Questions:

This section provides Catalina Gas' responses to each of the three questions included in the Report. The questions are stated first followed by Catalina Gas' response.

Report Question Number 1:

1. What actions will the operator take to remedy the historical deficiencies in asset knowledge with respect to Aldyl A pipes highlighted in this paper?

Catalina Gas' Response:

As explained in the responses above, Catalina Gas has taken multiple steps to limit the risks associated with its asset and material information, including for Aldyl A pipe. These steps, including transcribing its paper-based records into electronic format, building a "Functional Location" hierarchy in SAP, and sending Aldyl A pipe samples out for testing, have improved Catalina Gas' asset knowledge related to the small amount of Aldyl A pipe in its distribution system. With these improvements and other enhancements Catalina Gas plans to make to its standard practices, the relatively low risk of Catalina Gas System's Aldyl A pipe has been and will be further reduced. The low-risk aspects of the Aldyl A pipe in the Catalina Gas System include: the distribution system's overall small size, low operating pressure and low MAOP, the small amount of Aldyl A pipe in the system, the favorable laboratory analysis on the two Aldyl A pipe samples and known Aldyl A pipe installation dates, the lack of any historical failures due to material defect of Aldyl A pipe in the Catalina Gas System, and the existing standard practices related to assessment, testing and mitigation of Aldyl A pipe.

Catalina Gas plans to continue to make incremental improvements in its asset knowledge that are commensurate with the small size, relatively low risk, and unique characteristics of its Catalina Gas System. As part of this review, Catalina Gas plans to assess implementing additional data enhancements within SAP related to material characteristics, such as material type, manufacture date, and resin type, and other supply chain information. Catalina Gas will also continue to send selected samples of Aldyl A pipe found in new field locations to a lab for analysis.

Report Question Number 2:

2. What actions will the operator take to address the different waves of expected failures on Aldyl A pipes due to the different stress intensifiers acting on the different vintages of pipes given the historical deficiencies in asset knowledge? The operators should not limit themselves to only the intensifiers we highlighted in this report.

Catalina Gas' Response:

Aldyl A pipe known to exist in the Catalina Gas System accounts for a very small percentage of overall piping. Aldyl A pipe comprises approximately 0.3 miles of main (or about 3 percent of the miles of main in the gas distribution system) and about 100 service laterals (or about 10 percent of the total service laterals in the gas distribution system). As discussed above, as a proactive measure, Catalina Gas sent two samples of Aldyl A pipe to a lab for analysis. The samples were taken from two separate locations within the distribution system. One sample was taken from the Sol Vista development, known to contain the vast majority of Aldyl A mains and services within the distribution system. The second sample was collected from a completely different part of the system. The results of both samples indicated that LDIW was not present and were likely produced from DuPont's Alathon 5043 material, after the time period LDIW pipe was manufactured. Given the favorable laboratory analysis, known installation dates, and no history of Aldyl A pipe failures due to material defect, Catalina Gas does not expect any "waves" of failures.

As previously discussed, Catalina Gas has already taken steps to improve our risk management of Aldyl A pipe. Our standard practices call for the inspection of any pipeline exposed during routine operations and maintenance. If a piece of Aldyl A pipe is exposed, that piece is opportunistically replaced. This ongoing practice of inspection and replacement allows for Catalina Gas to continuously gather information to monitor at-risk sections of pipeline. Additionally, Catalina Gas performs an annual leak inspection survey of the entire gas distribution system on an interval not exceeding 15 months between inspections. These efforts all contribute to improving our risk management of Aldyl A pipe and other potential asset risks.

Notwithstanding the steps we have already taken to improve our risk management of Aldyl A pipe, Catalina Gas plans to make further improvements. As discussed above, these include:

- making further revisions to our standard practices to include a field test (reverse-bend test) for any Aldyl-A pipe opportunistically replaced during routine operations and maintenance;
- continuing to send selected samples of Aldyl A pipe found in new field locations to a lab for analysis;
- assessing revisions to an existing standard practice or development of a new standard practice to ensure that all safety advisories are given adequate consideration;
- updating our Gas Safety Plan to reflect known hazards (Aldyl A pipe), regulatory changes, and incorporate information gathered through routine inspection and laboratory analysis; and
- assessing the implementation of additional data enhancements within SAP related to pipe material characteristics, such as material type, manufacture date, and resin type, and other supply chain information.

Report Question Number 3:

3. In what forum (e.g. a general rate case or a separate application) will each operator intend to address the mitigation of the potential hazards posed by early vintage Aldyl A pipes?

Catalina Gas' Response:

As mentioned above, Catalina Gas' base rate revenues in 2013 were approximately \$1.5 million. The last rate increase request for the Catalina Gas System occurred in Application (A.) 08-09-019. In Decision (D.)09-09-034, the Commission authorized a base rate revenue requirement increase for the Catalina Gas System of approximately \$548,000 (i.e., a 61% revenue requirement increase) to \$1.45 million, phased in over a three-year period beginning in 2009. Catalina Gas had sought an increase in base rate revenue to \$1.654 million (i.e., an 83% revenue requirement increase) in calendar year 2009.

As discussed above, Catalina Gas has very few miles of Aldyl A pipe in its small Catalina Gas System, and as such, will not need to expend tens of millions of dollars or more for infrastructure replacement related to Aldyl A pipe. However, given the increased safety requirements Catalina Gas plans to implement and other enhancements it plans to study, the expected changes to General Order (GO) 112-E, other increased operation and maintenance requirements, and capital projects that are currently in process, Catalina Gas anticipates additional revenue may be needed to recover its costs.

Catalina Gas will assess all of these cost impacts to determine if a need exists to file a new general rate case application or other appropriate cost recovery mechanism to request changes to its revenue requirement.

Conclusion:

Catalina Gas' responses to the Report's recommendations and questions outline a series of steps already being performed and additional steps it plans to undertake in order to ensure the Catalina Gas System can continue to operate safely and reliably, while balancing the need for just and reasonable rates. The additional steps will be added to Catalina Gas' standard practices and incorporated into an updated Gas Safety Plan. Catalina Gas appreciates the Commission's attention to Aldyl A pipe risks and looks forward to continuing an open dialogue regarding this matter and any other potential gas safety issues.

If you have any questions, or require additional information, please contact me at (909) 274-1111.

Sincerely,

/s/ Pete Dietrich

Pete Dietrich

Senior Vice President, Transmission & Distribution

cc: Denise Tyrrell, SED Division Director
Elizaveta Malashenko, SED Deputy Director
Michael Colvin, SED Risk Assessment and Enforcement Section Supervisor
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All parties listed on A.13-11-003 and R.11-02-019.