Submission to the
National Transportation Safety Board
for the

Pacific Gas and Electric Company – Line 132

Accident Investigation

The Consumer Protection and Safety Division of the

California Public Utilities Commission

June 20, 2011

THE STATEMENTS IN THIS SUBMISSION ARE MADE BY THE CONSUMER PROTECTION AND SAFETY DIVISION (CPSD) OF THE CALIFORNIA PUBLIC UTILITIES COMMISSION (CPUC) AND DO NOT REFLECT THE POSITION OF THE COMMISSION. THE STATEMENTS ARE PRELIMINARY AND REFLECT CPSD'S CURRENT UNDERSTANDING OF THE FACTS AND EVENTS OF PACIFIC GAS AND ELECTRIC COMPANY'S NATURAL GAS TRANSMISSION PIPELINE RUPTURE AND EXPLOSION IN SAN BRUNO, CALIFORNIA, ON SEPTEMBER 9, 2010.

Introduction

On September 9, 2010, at approximately 1812 hours (PST), Segment 180 on Line 132, a 30-inch diameter natural gas transmission line located in San Bruno, California experienced a catastrophic failure. Line 132, operated by Pacific Gas and Electric Company (PG&E), was believed to be operating at 386 pounds per square inch gauge (psig) at the location and time of the accident. The failure resulted in a rupture of the pipeline along the longitudinal seam on a section of pipeline composed of short lengths of pipe ('pups'). The incident resulted in 8 fatalities, numerous injuries, and extensive property damage to the homes and area surrounding the accident location. The severity of the failure was such that a large length of pipe separated, was thrown out of its right-of-way, and landed approximately 100 feet away from where its original installation. The volume of gas released from the failure is estimated to be 47.6 million standard cubic feet.

CPUC Assistance with the Accident Investigation

Since the accident occurred, the CPUC has been supportive of the NTSB's investigation and has cooperated in full capacity. As an active party to the NTSB's investigation of Accident Number DCA 10MP008 (Accident), the CPUC has provided representation on the Metallurgy and Operations Groups. Through our representation, we have worked to obtain, review, and help clarify information utilized by the NTSB in its investigation. We have also provided comments on factual reports, and addendums, prepared by the various NTSB groups investigating the Accident.

NTSB Safety Recommendations

Early in its investigation, the NTSB issued recommendations to parties, including the CPUC, on actions that could be taken to increase the safety of pipelines pending any conclusive findings related to the cause(s) of the Accident. The CPUC took prompt action to implement the NTSB's recommendations. As a result, the CPUC has ordered transmission pipeline operators throughout California to assure that their pipelines are operating at maximum allowable operating pressures (MAOP) based on accurate records. Where accurate records are unavailable or insufficient, additional actions will be required. PG&E has already begun hydro-testing of many of its pipeline facilities. As part of this process, PG&E is also compiling a pipeline features list to confirm, and update, existing records for its transmission pipelines such that they correctly reflect its pipeline facilities.

On February 24, 2011, the CPUC opened a Rulemaking to consider and initiate various rule and policy changes for California natural gas transmission and distribution utilities. The first decision in this rulemaking, Decision, 11-06-017, issued on June 9, 2011, ordered all California natural gas transmission operators to develop and file Natural Gas Transmission Pipeline Comprehensive Pressure Testing Implementation Plans

(implementation plans). On June 23-24, 2011, the CPUC will hold a workshop to further discuss appropriate mitigation actions and the implementation plans necessary to perform these actions. The goal of the workshop is to also provide operators with guidance on how actions should be prioritized so the work is performed in a timely manner that minimizes the loss of gas service to customers. Maintaining gas service is particularly important on lines that serve electric power generators who, due to California's strict air quality standards, rely exclusively on natural gas for their operations.

In addition to the safety recommendations issued by the NTSB, the CPUC issued various directives ordering transmission line operators to reduce pressure on certain pipeline segments. A complete listing of the CPUC directives is provided in Attachment A to this letter.

The CPSD's Continuing Investigation of the Accident

Throughout the investigation of the Accident, resource limitations experienced by all parties have been a critical factor. Although much has been learned related to the Accident thus far, we believe additional work remains to be completed. In addition, PG&E has recently presented new information which we believe is significant and must be examined as part of the Accident investigation. As a result, the CPSD will continue with its investigation of the Accident by:

- Conducting interviews and continuing to review the voluminous information PG&E has provided and, especially, circumstances related to the pipeline information PG&E has recently provided;

- Excavating abandoned portions of Segment 180 near the accident site to determine if more can be learned about the pipe sections involved in the Accident;

- Reviewing documentation related to historical longitudinal seam repairs (i.e., the repair performed on Line 132 in 1988) and girth weld repairs performed on Line 132 by PG&E;

- Reviewing documentation from reviews and analysis of hydro-tests, performed by independent parties, to help identify systemic issues related to piping within PG&E's transmission system.

Because our investigation of the Accident is still pending, the CPSD is not in a position at this time to offer any conclusive determinations as to the causes, or contributing causes, for the Accident. However, our investigation is focusing on the following issues which we believe have a significant relationship to the Accident:

- Pipe that did not meet manufacturing standards for gas transmission pipelines. We are investigating where this pipe might have come from and how it came to be used in the construction of Segment 180. It is evident that salvaged pipe, and/or

pipe obtained for purposes other than gas carrier pipe, may have been utilized by PG&E in the 1956 relocation of Line 132;

- Regulations allowing an operator to establish the MAOP of its pipelines under the "grandfather clause" provision which does not require pipelines already in operation to be pressure tested beyond levels to which such pipelines may have been tested when they were originally installed;

- PG&E's integration of historical repair records in evaluating the feasibility for the application of Direct Assessment as an integrity assessment tool for segments assessed using this tool;

- Integrity Management Rule provisions which allow operators to consider manufacturing/construction defects as being stable provided pressures do not exceed specified historic levels;

- PG&E's operations of Line 132 and 101 to their MAOPs possibly without confirming the maximum operating pressure (MOP) reached by each HCA segment on the pipeline;

- Errors or gaps in PG&E's transmission pipeline records and if, and how, such inaccuracies contributed to the Accident.

- Decisions made by PG&E management, and policies developed, that may have prevented the company from identifying, testing, or replacing the inadequate sections of pipe installed on Segment 180 prior to the Accident.

CPSD Recommendations for Consideration by the NTSB

Although our investigation of the Accident is not yet complete, there are certain issues which we believe deserve consideration from the NTSB for inclusion as recommendations within its report on the investigation of the Accident. The recommendations noted below may be supplemented with others based on the findings of the CPSD investigation(s).

- Under the "grandfather clause," the MAOP of pipeline segments has been considered acceptable based solely on the fact that a given pipeline was operated at that pressure preceding the effective date of safety regulations. The MAOP on Line 132 was established through this process; however, as is evident from the investigation, this method is incapable of detecting and eliminating critical manufacturing and/or construction defects from the pipeline. Therefore, the NTSB should consider recommending the elimination of the "grandfather clause" and require pressure testing of all transmission pipeline segments in Class 3 and 4 locations, and Class 1 and 2 locations containing identified sites. Since many

such identified sites are not normally located in a contiguous stretch of a pipeline, all Class 1 and 2 segments should ultimately also be pressure tested. Elimination of the "grandfather clause" for distribution pipelines may not be necessary due to the lower stresses experienced by these pipelines.

- Remove stability consideration for ERW, lap welded, or other transmission pipe segments in Class 3 and 4 locations and Class 1 and 2 locations near an identified site. Such locations should be required to be assessed for integrity management through pressure testing or the ILI tool appropriate to the given threats on the segment.

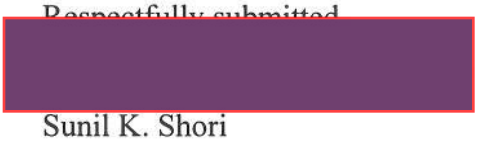
- Over some period of time, limit the use of Direct Assessment to Class 1, Class 2 and other locations where the use of Direct Assessment provides a thorough assessment of the threats on the pipeline. However, by and large, the use of Direct Assessment should become a complementary tool to pressure testing or ILI in Class 3 and Class 4 areas. This process to limit the use of Direct Assessment should be developed through a collaborative effort of experienced individuals from both the regulatory and industry sides of gas transportation.

- Consider lowering the Class location factor such that the MAOP of an HCA segment, located in a Class 3 or 4 areas, is more commensurate with the leak to rupture boundary for the segment. This process for this should be developed through a collaborative effort of experienced individuals from the regulatory and industry sides of gas transportation.

- Consider changing gas safety regulations to require mandatory placement of ACV/RCV in Class 3 and 4 areas, and others, where a lengthy operator response time or other safety considerations warrant their placement due to the fact that the presence of an ACV/RCV would reasonably increase public safety without compromising gas system reliability.

- Assure that no operator is operating its pipelines to its MAOP without confirming that doing so does not exceed the MOP of any HCA segment subject to 49 CFR, Part 192, Section 192.917. Also, review should be performed to determine if the requirements of this section need to be further clarified, modified, or eliminated (i.e., consider eliminating Direct Assessment as an assessment method for pipeline segments currently covered by this section).

Respectfully submitted



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Attachment – A

Directive #1 – September 13, 2010 addressed to PG&E:

- Reduce operating pressure on L-132 to a pressure level 20% below the operating pressure at the time of the failure, and retain pressure until allowed by the Commission
- Conduct integrity assessment of all gas facilities in the impacted area
- Conduct an accelerated leak survey of all transmission lines, giving priority to segments in Class 3 and 4 locations
- Evaluate records of customer leak-complaint response times and response effectiveness system-wide
- Prepare a plan for a complete safety inspection of PG&E's entire natural gas transmission pipeline system
- Make all employees and contractors available for interviews with federal and state investigators
- Preserve all records related to the incident, including work at the Milpitas Terminal during the month of September 2010
- Preserve all records related to the maintenance or modification of L-132 by PG&E and/or its contractors performed within the City of San Bruno over the past 10 years
- Review the classification of natural gas transmission lines and determine any changes that may have occurred since initial designation
- Investigate and report forecasted versus actual levels of spending on pipeline safety and pipeline replacements from 2005 to present
- Conduct a review of all gas transmission line valve locations to determine where it would be prudent to replace manual valves with automated valves

Directive #1 was rolled into Resolution L-403 on September 23, 2010 which ordered:

- Waiving the 30-day comment on the Executive Director's Letter to PG&E dated September 13, 2010
- Establish an Independent Review Panel
- The Commission President shall select members of the Panel
- PG&E shall pay for the costs and expenses of the Panel
- PG&E shall provide cooperation to Commission staff and the Panel
- The Commission authorizes the Panel to have the same investigatory authority and access to information as the Commission staff possesses under the PU Code
- PG&E shall mark confidential documents, provide justification for its confidentiality, and must not already be available to the public
- The Commission President is authorized to act on behalf of the Commission to determine whether documents marked as "confidential" can be released to the public

- PG&E shall make available its employees or independent contractors for examinations under oath by the Commission staff or the Panel
- PG&E shall reduce pressure on L-132 20% below the operating pressure at the time of the failure and retain that pressure until directed by the Commission
- Conduct integrity assessment of all gas facilities in the impacted area
- Conduct accelerated leak survey of all gas transmission pipelines, giving priority to segments in Class 3 and 4 locations
- Evaluate records of customer natural gas leak-complaint response times and response effectiveness system-wide
- Prepare a plan for a complete safety inspection of entire natural gas transmission pipeline system
- Make all employees and independent contractors who performed work on L-132 prior to the San Bruno explosion available for interviews with federal and state investigators
- Preserve all records related to the San Bruno explosion, including work at Milpitas Terminal during the months of August and September 2010.
- Preserve all records related to the inspection, maintenance, or modification of L-132 within the city of San Bruno over the past 10 years.
- Review classification of its transmission pipelines and determine if there were any changes since initial designation
- Report results of the review of classifications within 10 days
- Investigate and report forecasted versus actual levels of spending on pipeline safety and replacements from 2003 to present within 10 days
- Conduct a review of all transmission line valve locations to determine locations where it would be prudent to replace manual valves with remotely operated or automated valves. Report results of review within 30 days
- PG&E shall fully cooperate with the Commission's investigation into the San Bruno explosion, including general investigation into the safety and integrity of its transmission pipelines, and respond expeditiously to Commission's request for information

Directive #2 – September 17, 2010 letter to PG&E:

- Provide a list of PG&E's top 100 list of high priority pipeline projects from 2007 to present
- For each proposed project on the list, describe status of the project
- Provide maps showing location of each pipeline segment on the list
- Identify exact milepost at which the rupture occurred on September 9, 2010
- For any segment of L-132 currently or previously listed on the high priority projects list, provide a description of each segment, explanation of deciding factors in deciding why they were included on the list, and why any replacements have not yet been completed
- Describe and provide a justification for how long it will take to develop (a) list of locations where manual valves could be replaced with ACRs/RCVs, and (b) estimate of capital cost and any increase on O&M costs of such replacement of

valves. Also include description of commercially available valves, including analysis of advantages and disadvantages of RCVs versus ACVs

Directive #3 – December 16, 2010 to PG&E:

- Reduce pressure by 20% below the MAOP for each line that have segments that meet all of the following characteristics: (a) all Class 3 and 4 pipelines, and Class1 and 2 pipelines located in HCAs; (b) 30-inch diameter pipelines having DSAW or its manufacturing equivalent; and (3) installed prior to January 1, 1962, and have not undergone hydrostatic pressure testing or equivalent
- Assess integrity of pipelines described above, using one of the following four methods: (a) hydrostatic or other appropriate pressure test; (b) X-ray; (c) camera examination of the interior of the pipe; or (d) an inline inspection using a "smart pig" or other technology appropriate in assessing seam integrity
- PG&E must obtain authorization from the Commission before re-pressurizing any gas transmission pipelines that have pressure reduced pursuant to this directive. To obtain such authorization, PG&E shall submit the following: (a) identifying pipeline segments described in this directive; (b) assessing the condition of the segments identified in this directive; and (c) setting forth all actions taken to meet these directives including a description of the actions taken to safely return to normal pressure

Directive #4 – January 3, 2011 to PG&E:

- Aggressively and diligently search for all as-builts drawings, alignment sheets, and specifications, and all design, construction, inspection, testing, maintenance, and other related records relating to pipeline system components for gas transmission systems in Class 3 and 4 locations, and Class 1 and 2 HCAs that have not had a MAOP established through prior hydrostatic testing. The records should be traceable, verifiable, and complete.
- Use the traceable, verifiable, and complete records to determine the valid MAOP, based on the weakest section of the pipeline or component in transmission lines in Class 3 and 4 locations, and Class 1 and 2 HCAs that have not had a MAOP established through prior hydrostatic testing.

Directive #4 was rolled into Resolution L-410 on January 13, 2011 which ordered:

- PG&E to take all actions contained within the Executive Director's letter of December 16, 2010
- PG&E, SDG&E, SoCalGas, and Southwest Gas are ordered to take all actions contained within the Executive Director's letters dated January 3, 2010
- PG&E is ordered to complete the records search by March 15, 2011

Directive #5 – February 2, 2011 letter to PG&E:

- Reduce pressure by 20% below the MAOP on the following transmission lines that have segments located in HCAs: L-148, DFM 0805-01, DFM 0807-01, and DFM 1816-01. PG&E shall maintain the pressure reductions until the Commission authorizes them to return the lines to normal operating pressures
- Reduce operating pressure by 20% below MAOP for any additional transmission lines that have segments located in HCAs that have experienced planned or unplanned events in which the segments experienced pressure greater than 110% of MAOP.