

Decision 11-10-010 October 6, 2011

**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking on the  
Commission's Own Motion to Adopt New  
Safety and Reliability Regulations for Natural  
Gas Transmission and Distribution Pipelines  
and Related Ratemaking Mechanisms.

Rulemaking 11-02-019  
(Filed February 24, 2011)

**DECISION RESCINDING OPERATING PRESSURE LIMITATION  
ON SUCTION SIDE OF TOPOCK COMPRESSOR STATION**

**1. Summary**

This decision authorizes Pacific Gas and Electric Company to restore the Maximum Allowable Operating Pressure of the suction side of the Topock Compressor Station to 660 pounds per square inch gage.

**2. Background**

Located near the Arizona border, the Pacific Gas and Electric Company's (PG&E) Topock Compressor Station (Topock) receives gas from three pipelines: PG&E's Lines 300A and 300B (fed by El Paso Natural Gas' interstate pipeline), and the Transwestern interstate pipeline. Gas coming into Topock is compressed and leaves through Lines 300A and 300B. These lines, which constitute the portion of PG&E's backbone system that bring gas into PG&E's service territory from the Southwest producing basins, terminate at PG&E's Milpitas Terminal. Topock has historically operated at a Maximum Allowable Operating Pressure (MAOP) of 660 pounds per square inch gage (psig).

On February 2, 2011, the Commission's Executive Director ordered PG&E to reduce pressure on all PG&E natural gas pipelines that had experienced pressure increases of greater than 10% of MAOP. This order required PG&E to reduce the operating pressure on the suction side of the Topock compressor station, which had experienced overpressurization to 727 psig, or 1 psig over the authorized 726 psig. The order limited PG&E to operating this segment at 528 psig, or 20% below the authorized MAOP of 660 psig.

On July 11, 2011, PG&E moved for a Commission order delegating authority to the Executive Director to review and approve requests to restore operating pressure on lines where pressure tests had been completed. In Decision (D.) 11-09-006, the Commission denied PG&E's request for a delegation of authority and established an expedited process by which the Commission would review such requests.

On September 12, 2011, and pursuant to D.11-09-006, PG&E filed and served its request to lift the operating pressure restrictions on the suction side of the Topock, along with the required supporting information. PG&E stated that without restoring normal operating pressure, overall pipeline flow rates on PG&E's backbone Lines 300A and 300B will be reduced this winter, and that El Paso Natural Gas will need to resume deliveries to PG&E at the normal (600 psig +) pressures when a Southern California Gas Company line returns to service in late October. PG&E concluded that it needs to return Topock to normal operation to avoid potential curtailments of gas deliveries to its customers this winter.

### **3. Pressure Test Results**

To validate the strength and integrity of the Topock piping and components without prior complete pressure test records, PG&E stated that it

pressure tested one-half of the station piping at a time, while maintaining minimum pipeline flows through the other half. PG&E explained that all segments were successfully tested to a pressure above the minimum required to confirm the safe operation of the Topock station at the established MAOP with an additional measure of safety in compliance with the requirements of 49 Code of Federal Regulations (CFR) Part 192, Subpart J. PG&E provided the complete pressure test results for each test segment in its Supporting Information.<sup>1</sup>

As required by D.11-09-006, the Commission's Consumer Protection and Safety Division (CPSD) reviewed the pressure test information provided by PG&E. In a memorandum dated September 12, 2011, CPSD listed several deficiencies in PG&E's pressure test protocols and records, but determined that the tests conducted by PG&E had demonstrated adequate assurance of the fitness for operation of these facilities at the restored MAOP.<sup>2</sup> CPSD directed PG&E to remedy the listed deficiencies for future testing.

CPSD also informed the Commission that PG&E's pressure test data showed that PG&E was pressure testing facilities to a MAOP of 735 psig, and certain vessels to a MAOP of 900 psig, rather than the previously existing 660 psig. Thus, these pressure test results not only supported lifting the Commission's operating pressure restrictions but also, as provided in 49 CFR,

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<sup>1</sup> PG&E redacted certain critical infrastructure details including maps and drawings of stations components from its public filing. At the direction of the Administrative Law Judge (ALJ), PG&E provided a full set to CPSD under seal and offered parties an opportunity to inspect the full documents.

<sup>2</sup> The memorandum is included in the record as part of Exhibit E to PG&E's Supporting Information filed on September 12, 2011.

Part 192, Subpart K, § 192.555, PG&E's pressure test results could be used as part of an operator's review to justify a higher MAOP when conditions later permit.

#### **4. Evidentiary Hearing**

On September 19, 2011, the assigned Commissioner Florio, Commissioner Simon, and ALJ Bushey convened a hearing on PG&E's request to restore MAOP at the Topock. PG&E presented its Vice President of Gas Operations, Standards and Policies to testify that PG&E's engineers had validated the engineering and construction, and performed hydrostatic pressure testing on all segments and components for which a prior pressure test result was not available. PG&E's Vice President concluded that in her professional judgment, the suction side of the Topock was safe to operate at the MAOP of 660 psig. The witness was cross examined by the parties, Commissioners, and ALJ.

#### **5. Discussion**

Pursuant to Public Utilities Code Section 451 each public utility in California must:

Furnish and maintain such adequate, efficient, just and reasonable service, instrumentalities, equipment and facilities,...as are necessary to promote the safety, health, comfort, and convenience of its patrons, employees, and the public.

The duty to furnish and maintain safe equipment and facilities falls squarely on California public utilities, including PG&E. The burden of proving that particular facilities are safe also rests with PG&E.

The Executive Director and this Commission have taken extraordinary steps to restrict the operating pressure on certain of PG&E's natural gas transmission pipelines in response to the worst tragedy in California history from public utility operations. In D.11-09-006, the Commission set forth the

specific requirements for PG&E to demonstrate that the operating pressure restrictions can safely be removed. These requirements begin with a pressure test complying with regulations applicable when conducted, and also require a responsible engineer's review of the pipeline construction and assessment of the pressure test results to ensure safe operations. The end result is that PG&E must be fully accountable for the pressure test and the assertion that the line can be safely operated at the restored MAOP.

### **5.1. Pressure Test Results**

PG&E has presented complete pressure test results for the 11 segments pressure tested for the suction side of the Topock Compressor Station that had not been previously tested. The test results included hydrostatic test packages for each segment, as well as supporting documentation including test procedure, post hydro test leak survey results, ultrasonic thickness records, and carbon equivalency tests.

CPSD has examined these test results and found that the results substantially, albeit not perfectly, comply with applicable requirements and provide adequate assurance of fitness to operate at the restored MAOP of 660 psig.

PG&E has presented adequate pressure test results supporting its assertion that the suction side of the Topock can safely be operated with an MAOP of 660 psig. These test data show that pipeline facilities were subject to sustained pressure levels well above the minimum levels required to establish a MAOP of 660 psig, for a period of eight hours, with no failure of these facilities. The maximum pressure level of more than 50% above MAOP of 660 psig also well

exceeds the 20% pressure reversal level at which the probability of pipeline failure, due to pressure reversal, is considered to be one in ten million.<sup>3</sup> Thus, the ratio of the high test pressure to the intended MAOP of 660 psig effectively demonstrates the low risk of failure of these pipeline facilities.

Although CPSD found the testing adequate in this instance, CPSD identified several pressure testing deficiencies. We order PG&E to remedy all deficiencies noted in CPSD's September 12, 2011, memorandum for its future MAOP restoration requests.

### **5.2. Responsible Engineer's Review**

PG&E's Vice President of Gas Operations, Standards and Policies, a Professional Mechanical Engineer registered with the State of California, testified under oath that PG&E's engineers have validated the engineering and construction, and performed hydrostatic pressure testing on all segments and components for which a prior pressure test result was not available. PG&E's Vice President concluded that in her professional judgment, the suction side of the Topock was safe to operate at the MAOP of 660 psig.

We, therefore, find that PG&E's responsible engineer has reviewed the engineering and construction of the segments, as well as the results of the pressure tests, and concluded that the MAOP may be safely returned to 660 psig.

### **5.3. PG&E is Accountable for Safe Operations at Restored MAOP**

PG&E operates a natural gas transmission and distribution system. As the operator, PG&E must ensure that the system is operated safely. PG&E presented

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<sup>3</sup> See Memorandum from Michelle Cooke, Interim Director, CPSD, to PG&E, September 12, 2011.

pressure test results, supporting information, and the testimony of its responsible engineer verifying that the Commission could safely rescind its operating pressure limitation and that PG&E could resume operations with a MAOP of 660 psig for the suction side of the Topock Compressor Station.

#### **5.4. Conclusion**

Therefore, we conclude that PG&E has demonstrated that the suction side of the Topock may be safely returned to its previous MAOP of 660 psig. We note further that consistent with 49 CFR 192 Subpart K, PG&E's pressure test results could be used as part of an operator's review required by 49 CFR 192.555 to justify a higher MAOP when conditions later permit.

#### **6. Assignment of Proceeding**

Michel Peter Florio is the assigned Commissioner and Maribeth A. Bushey is the assigned ALJ in this proceeding.

#### **7. Comments on Proposed Decision**

The proposed decision of the ALJ Maribeth A. Bushey in this matter was mailed to the parties on September 23, 2011, in accordance with the expedited schedule adopted in D.11-09-006. The expedited schedule called for parties to file and serve comments no later than noon, Friday, September 30, 2011. PG&E filed comments requesting a revision to Ordering Paragraph 3. The revision has not been made as it could have been interpreted to decrease PG&E's testing obligation.

#### **Findings of Fact**

1. The Commission ordered PG&E to reduce operating pressure on several natural gas transmission pipelines, pending demonstration that the pipelines can be safely operated at the originally established MAOP.

2. On September 12, 2011, PG&E filed and served pressure test results for the suction side of the Topock, as part of its Supporting Information required by D.11-09-006.

3. PG&E's Vice President of Gas Operations – Standards and Policies verified that PG&E has validated the engineering and construction of, and performed pressure tests in accord with 49 CFR 192 Subpart J on all segments of the natural gas pipelines on the suction side of the Topock. The Vice President concluded that these pipelines could be safely operated at the restored MAOP of 660 psig.

4. CPSD reviewed PG&E's pressure test results, identified several deficiencies but concluded that the information presented was adequate to support the conclusion that pressure on the lines could be safely restored to the previous MAOP of 660 psig.

#### **Conclusions of Law**

1. PG&E has complied with the Supporting Information requirements of D.11-09-006.

2. PG&E has demonstrated that the suction side of the Topock Compressor Station has been successfully pressure tested in accord with 49 CFR 192 Subpart J.

3. The Commission's operating pressure restriction on the pipelines in the suction side of the Topock Compressor Station can safely be rescinded.

4. PG&E should be ordered to remedy the pressure testing deficiencies noted in CPSD's September 12, 2011, memorandum.

5. The public necessity as defined in Rule 14.6(c)(9) of the Commission's Rules of Practice and Procedure requires a reduction of the 30-day period for public comment and review of the Commission's proposed decision on the



whether to lift the operating pressure limitation on the suction side of the Topock compressor.

6. This decision should be effective immediately.

## **O R D E R**

Therefore, **IT IS ORDERED** that:

1. The Commission's February 2, 2011, operating pressure limitation placed on the suction side of the Topock Compressor Station owned and operated by Pacific Gas and Electric Company is rescinded.

2. Pacific Gas and Electric Company must operate the Topock Compressor Station in accord with applicable state and federal law and regulations.

3. In future requests to rescind Commission-ordered operating pressure limitation, Pacific Gas and Electric Company must remedy the pressure testing deficiencies noted in the Consumer Protection and Safety Division's September 12, 2011, memorandum.

4. In future requests to rescind Commission-ordered operating pressure limitation, Pacific Gas and Electric Company must include a summary table showing the following information for each segment tested: current maximum operating pressure, minimum indicated test pressure at test point, spike test results, ratio of highest test pressure to maximum operating pressure, percent specified minimum yield strength at test pressure, percent specified minimum yield strength at maximum operating pressure.

5. In future requests to rescind Commission-ordered operating pressure limitation, Pacific Gas and Electric Company must identify segments tested to a maximum operating pressure higher than the previous maximum operating

pressure and indicate if and when Pacific Gas and Electric Company expects to undertake the review necessary to increase the maximum operating pressure for that segment.

6. Rulemaking 11-02-019 remains open.

This order is effective today.

Dated October 6, 2011, at Los Angeles, California.

MICHAEL R. PEEVEY  
President  
MICHEL PETER FLORIO  
CATHERINE J.K. SANDOVAL  
MARK J. FERRON  
Commissioner

I reserve the right to file a concurrence.

/s/ TIMOTHY ALAN SIMON  
Commissioner

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**Concurrence of Commissioner Timothy Alan Simon on Item 26 Decision  
D.11-10-010 Order Instituting Rulemaking on the Commission's Own Motion  
to Adopt New Safety and Reliability Regulations for Natural Gas  
Transmission and Distribution Pipelines and Related Ratesetting Mechanisms**

My concurrence with this Decision is based on my understanding that it authorizes Pacific Gas and Electric Company (PG&E) to restore the Maximum Allowable Operating Pressure (MAOP) of the suction side of the Topock Compressor Station to 660 pounds per square inch gage. Accordingly, a stricter precedent is set for PG&E and other utilities for requesting to increase pipeline pressure and notice of such requests should always be provided to public and local officials along with the steps taken to make the pipeline safe. I support that this decision increases operating pressure on specific segments of natural gas pipelines on the suction side of the Topock compressor station. Raising the pressure will restore the overall pipeline flow rates on PG&E's Lines 300A and 300B this winter to meet its core customer demand. I want to be clear that the Decision addresses only increasing the operating pressure based on PG&E's pressure test results for the 11 segments pressure tested on the suction side of the Topock Compressor Station and does not substitute or replace any other tests that PG&E will be required to undergo as part of its pipeline safety protocol.

I am concerned that increasing operating pressure is an important step in ensuring pipeline safety and PG&E and other utilities are required to follow detailed steps every time such requests are made to CPUC. At the core of my concern is the pressure testing accountability and verification. Based on my review of the record, I am concerned, further that matters of this sort are more appropriately handled by a vote of the full Commission. There is little recognition in this Decision why it is crucial for PG&E and other utilities to be responsive to issues raised by the CPUC Consumer Protections and Safety Division (CPSD)<sup>1</sup> about spike tests and that they must engage in independent

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<sup>1</sup> Consumer Protection and Safety Division Review of Pacific Gas and Electricity Company Request to Restore MAOP of Pipeline Facilities at Topock Compressor Station, Memorandum, September 12, 2011: In a memorandum dated September 12, 2011, CPSD listed several deficiencies [not conducting some spike tests as required] in PG&E's pressure test protocols and records, but determined that the tests conducted by PG&E had demonstrated adequate assurance of the fitness for operation of these facilities at the restored MAOP. Consumer Protection and Safety Division, California

*Footnote continued on next page*

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verification and expert test conclusion. My concern is that going forward PG&E should neither conclude nor substitute the necessity of required spike tests by its own determination.

The National Transportation Safety Board (NTSB) in its January 3, 2011 Safety Recommendation letter<sup>2</sup> stated the importance of spike testing<sup>3</sup>. Studies (discussed in section 1.13.1.1, "Pressure Testing" NTSB Accident Report)<sup>4</sup> have shown that hydrostatic pressure testing is most effective when it incorporates a spike test in which the pipeline is initially pressurized to a higher level for a short time. Accordingly, the NTSB recommends that PHMSA amend 49

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Public Utilities Commission, Review of Pacific Gas and Electricity Company Request to Restore MAOP of Pipeline Facilities at Topock Compressor Station, September 12, 2011.

<sup>2</sup> National Transportation Safety Board, Safety Recommendations to PG&E Regarding Record-keeping and Hydrostatic Pressure Testing, Page 2, January 3, 2011.

<sup>3</sup> The MAOP for a pipeline can be established by conducting a hydrostatic pressure test that stresses the pipe to 125 percent of the desired MAOP without failure. In a hydrostatic pressure test, a pipe segment is typically filled with water at a specific pressure for a specific period of time to test the strength of the pipe. Hydrostatic testing requirements and restrictions for natural gas pipelines are specified in Title 49 Code of Federal Regulations (CFR) Part 192, Subpart J [ 49 CFR Part 192, Subpart J]. The spike test is a variation of the hydrostatic pressure test in which a higher hydrostatic pressure, usually 139 percent of the MAOP, is applied for a short period of time (typically about 30 minutes). The spike test is intended to eliminate flaws that may otherwise grow and cause failure during pressure reduction after the hydrostatic test or resulting from normal operational pressure cycles. It is advantageous to include a spike test because it limits the time the line is at the higher pressure to reduce the potential amount of crack growth. Although hydrostatic testing is recognized to be a direct and effective methodology for validating an MAOP, its implementation requires that operating lines be shut down, which may adversely affect customers dependent on the natural gas supplied by the pipeline, particularly if the pipe fails during the test, which could necessitate a protracted shutdown. Consequently, it is preferable to use available design, construction, inspection, testing, and other related records<sup>3</sup> to calculate the valid MAOP.

<sup>4</sup> National Transportation Safety Board Accident Report, NTSB/PAR – 11/01 PB 2011-916501, Section 1.13.1.1, pp. 82.

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CFR 192.619 to delete the grandfather clause and require that all gas transmission pipelines constructed before 1970 be subjected to a hydrostatic pressure test that incorporates a spike test.<sup>5</sup>

Thus, while I can agree with CPSD arguments that, if done properly, PG&E's testing can assist in avoiding unnecessary spike tests, I am concerned that the Commission is not establishing precedent which permits PG&E to self-evaluate and report to the Commission on its assessment of the necessity of spike tests. Going forward, such determination should always be made by CPSD recommendation and authorized by vote of the Commissioners.

Finally, the process to restore operating pressure should be analyzed by independent experts and reviewed in a public process by the Commission. In no case should such requests be conveyed by memo from a utility to CPSD. Similarly, the conclusion to increase pressure should be based on pressure test results as a primary measure. I request CPSD establish protocol to keep each Commissioner informed of PG&E's testing compliance.

This Decision should not be interpreted as embracing ancillary communications between PG&E and CPSD or sanctioning collateral documentation materials that are not subject to the public review. CPUC September 8, 2011 decision denied PG&E's motion to delegate authority to the Executive Director to approve request to lift operating pressure limitations.<sup>6</sup>

The San Bruno tragedy, urgently, requires the CPUC to evaluate the effectiveness of PG&E's safety requirements; improve the way information is provided to the public and emergency responders; and reform the process by which utilities notify federal, state and local officials of safety measures. PG&E must address all necessary safety measures.

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<sup>5</sup> *Ibid*, Section 2.5.2, pp. 107.

<sup>6</sup> California Public Utilities Commission Decision 11-09-006, September 8, 2011. Order Instituting Rulemaking on the Commission's Own Motion to Adopt New Safety and Reliability Regulations for Natural Gas Transmission and Distribution Pipelines and Related Ratemaking Mechanisms.

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Accordingly, I concur with this decision and will vigilantly continue to examine whether the testing and the increase of pipeline pressure process are effective.

Dated October 12, 2011, at Los Angeles, California.

/s/ TIMOTHY ALAN SIMON

Timothy Alan Simon  
Commissioner