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October 21, 2016

Mr. Byron Coy, PE
Director, Eastern Region
Pipeline and Hazardous Materials Safety Administration
820 Bear Tavern Road, Suite 103
West Trenton, NJ 08628

RE: CPF 1-2016-5008 NOPV and Compliance Order

Dear Mr. Coy,

This letter is the formal response by Dominion Transmission, Inc. (DTI) to Notice of Probable Violation (NOPV) CPF 1-2016-5008 and Proposed Compliance Order, dated September 21, 2016 and received by DTI on September 22, 2016.

DTI appreciates the opportunity to address the concerns noted in the Proposed Compliance Order. The following is a summary of the noted items, and the actions taken by DTI in response.

1. **§195.402 Procedural manual for operations, maintenance, and emergencies.**

   (a) General. Each operator shall prepare and follow for each pipeline system a manual of written procedures for conducting normal operations and maintenance activities and handling abnormal operations and emergencies . . .

DTI's procedures did not include sufficient guidance for operating, maintaining, testing, record keeping, and dispatcher training of the system, as required by §195.444, CPM leak detection, which states:

"*Each computational pipeline monitoring (CPM) leak detection system installed on a hazardous liquid pipeline transporting liquid in single phase (without gas in the liquid) must comply with API RP 1130 (incorporated by reference, see §195.3) in operating, maintaining, testing, record keeping, and dispatcher training of the system.*"

Specifically, DTI failed to include the requirements of API RP 1130 Sections 6.2, 6.3, 6.4 and 6.5, Incorporated by Reference, in the procedures for its CPM system that became operational in May 2008.

During the inspection, the PHMSA inspector reviewed the following documents provided by DTI:

1. US-1406_Dominion-01-SAT-001 Rev1 dated 20080114
2. G-136 Leak Detection Procedure-undated
3. ATMOS Operator Training-undated
4. ATMOS G136 Operation Manual V1.0 dated 20080108
5. US-1406_Dominion_01-FDS-001 Rev1.0 dated 20070828
6. US-1406-Dominion-Proj Maint Report 2014
7. Procedure – NGL Operations

None of the documents provided by DTI provided guidance required by API RP 1130. Details of the procedural deficiencies noted by PHMSA are provided below.

1. API RP 1130, Section 6.2 System Testing states in part that:

   "Testing of CPM systems is performed . . . when there are changes to the CPM or the pipeline system that warrant re-evaluation of system performance, or for periodic evaluation of actual system performance.

   The primary purpose of testing is to assure that the CPM system will alarm if a commodity release occurs. Another purpose of testing may be to assure that data failure alarms and irregular operator condition alarms function as expected. The text that follows will not discuss CPM testing for other than commodity release alarms.

   Prior to testing careful planning should be considered as to the reasons for the test and methods that will be employed and the process and procedures that will be followed. The test should be well managed to make sure it achieves the desired results.

   Consideration should be given to the potential for a reduced level of pipeline monitoring during a CPM system test. The Pipeline Controllers should be alert to the possibility of an actual commodity release that could occur simultaneously with the CPM system test and that an actual commodity release may be disguised or misdiagnosed during the test interval."

   During the inspection, DTI stated that:

   a. It performed an annual test on the system, flaring liquid propane from the pipeline to simulate a leak.

   b. It would then verify the alarm response time with the system specifications and distance of the "failure" from Hastings to determine the system performance.

   c. It elects to do an annual leak test.

d. The annual testing had been conducted similar to the Site Acceptance Test, performed by ATMOS in 2008. ATMOS repeated those tests in 2014.

In an e-mail from DTI to PHMSA dated 5/14/2015, DTI responded to PHMSA's questions related to DTI's procedures for testing the CPM system as follows:

". . . A procedure was not located for the annual leak test. Since the audit, a procedure has been developed for the annual leak test. This procedure has been attached."

DTI's procedures did not include guidance for meeting the requirements of API RP 1130, Section 6.2.

DTI Response:

DTI promptly acted after this issue was identified as a concern by the PHMSA Inspector. DTI began reviewing procedures, training, and records after the PHMSA Inspector initially identified the concern. DTI has revised procedures to incorporate API RP 1130 Section 6.2 guidance. DTI reviewed and revised the annual Computational Pipeline Monitoring (CPM) Leak Detection testing procedures and DTI Standard Operating Procedure (SOP) 185/47 to incorporate similar language as stated in item 1.

2. API RP 1130 Section 6.2.3 Periodic Retesting states in part that:

CPM retesting of applications will be necessary on a periodic basis to meet regulations or to confirm the continued effectiveness of the CPM. Retesting will be documented in test records. CPM applications should be tested on a 5-year interval to confirm the CPM system's continued effectiveness. More frequent testing should be done if there is a change in regulations that require retesting. . .

DTI's procedures did not include guidance on how the requirements of API RP 1130 Section 6.2.3 are met.

DTI Response:

DTI promptly acted after this issue was identified as a concern by the PHMSA Inspector. DTI began reviewing procedures, training, and records immediately after the PHMSA Inspector initially identified the concern. DTI has revised procedures to incorporate API RP 1130 Section 6.2.3 guidance. DTI reviewed and revised the annual Computational Pipeline Monitoring (CPM) Leak Detection testing procedures and DTI Standard Operating Procedure (SOP) 185/47 to incorporate language referencing an annual leak test and to note the primary purpose of testing is to assure that the CPM system will alarm if a commodity release occurs.

3. API RP 1130 Section 6.2.4 Change-driven Testing states in part that:

   CPM systems should be retested following significant changes to ensure that the performance of the CPM system is not impacted. . . .

   Examples of significant changes could include, but are not limited to:

   - *Major pipeline or software configuration changes or addition of features.*
   - *Abnormal pipeline operating conditions.*
   - *New versions of the CPM software.*
   - *Instrument and measurement additions or changes.*
   - *SCADA system updates.*

   DTI's procedures did not include guidance for meeting the requirements of API RP 1130, Section 6.2.4.

   DTI Response:

   DTI promptly acted after this issue was identified as a concern by the PHMSA Inspector. DTI began reviewing procedures, training, and records after the PHMSA Inspector initially identified the concern. DTI has revised procedures to incorporate API RP 1130 Section 6.2.4 guidance. DTI reviewed and revised the annual Computational Pipeline Monitoring (CPM) Leak Detection testing procedures and DTI Standard Operating Procedure (SOP) 185/47 to incorporate this language.

4. API RP 1130 Section 6.2.6 Test Records states in part that:

   Records detailing the reasons for the tests, the test parameters and methodology and the test results should be recorded and retained for initial tests and for retests. These details of at least two previous tests should be retained. . .

   DTI's procedures did not include the requirements of API RP 1130, Section 6.2.5.

   DTI Response:

   DTI promptly acted after this issue was identified as a concern by the PHMSA Inspector. DTI began reviewing procedures, training, and records after the PHMSA Inspector initially identified the concern. DTI has revised procedures to incorporate API RP 1130 Section 6.2.6 guidance. DTI reviewed and revised the annual Computational Pipeline Monitoring (CPM) Leak Detection testing procedures, data collection and inspection process to ensure that DTI is capturing the annual leak test data as specified in API RP 1130 Section 6.2.6.

5. API RP 1130 Section 6.3.2 – Parameter Changes states in part that:

   Provisions should be made against any alarm, parameter, and or sensor being inhibited without just cause. . .

   DTI's procedures did not include guidance for meeting the requirements of API RP 1130, Section 6.3.2.

   DTI Response:

   DTI promptly acted after this issue was identified as a concern by the PHMSA Inspector. DTI began reviewing procedures, training, and records after the PHMSA Inspector initially identified the concern. DTI has revised procedures to incorporate API RP 1130 Section 6.3.2 guidance. DTI reviewed and revised the Hastings Gas Processing Plant Control Room Management Plan to note that CPM leak detection alarms are unable to be inhibited and that controllers are to properly document any operational issues to the CPM Leak Detection system so that they may be corrected as quickly as possible. In addition to the CPM leak detection, the pipeline (G-134/G-136) has low pressure alarms and automatic valves that would be relied upon during any maintenance activities on the CPM leak detection system. The updated training module included steps to take to address system or sensor communication malfunctions.

6. API RP 1130 Section 6.3.3 – Pipeline System Maintenance Activities states in part that:

   The Pipeline Controller should be informed or have an indication whenever a CPM system sensor is inhibited and or disabled which causes the system to operate in a degraded mode. . .

   Provisions should be made to minimize the effect of maintenance on the performance of the CPM system during periods of hardware, software and field equipment maintenance and system upgrades.

   System maintenance should be performed under the control of maintenance procedures, which address the effect of field and system maintenance on CPM performance. . .

   DTI's procedures did not include guidance for meeting the requirements of API RP 1130, Section 6.3.3.

   DTI Response:

   DTI promptly acted after this issue was identified as a concern by the PHMSA Inspector. DTI began reviewing procedures, training, and records after the PHMSA Inspector initially identified the concern. DTI has revised procedures to incorporate API RP 1130 Section 6.3.3 guidance. DTI reviewed and revised the Hastings Gas

Processing Plant Control Room Management Plan to note that controllers are to properly document any operational issues associated with the CPM Leak Detection system so that they may be noted and corrected as quickly as possible.

7. API RP 1130 Section 6.4 - CPM System Data Retention – states in part that:

   The retention of data and reports from a CPM system may be governed by several factors including the requirements of regulations, company policy, engineering and operations requirements and the Pipeline Controller training requirements. . .

   DTI's procedures did not include guidance for meeting the requirements of API RP 1130, Section 6.4.

DTI Response:

DTI promptly acted after this issue was identified as a concern by the PHMSA Inspector. DTI began reviewing procedures, training, and records after the PHMSA Inspector initially identified the concern. DTI has revised procedures to incorporate API RP 1130 Section 6.4 guidance. DTI has modified SOP 185/47 to incorporate data and report retention requirements for the CPM leak detection system.

8. API RP 1130 Section 6.5 – Pipeline Controller Training and Retraining state in part that:

   "The users of the CPM system (i.e. the Pipeline Controllers) and any CPM support staff require appropriate CPM training. . . Specific training and reference material is necessary to prepare the Pipeline Controller to adequately recognize and respond to these alarms. This requires both a knowledgeable perspective on the alarms themselves as well as the nature of the alarms. The American Petroleum Institute has created a publication (API Publ 1161) for Controller Training that considers many important related training issues outside the scope of this recommended practice. . .

   In an email dated 2/16/2016, DTI stated in part that:

   "The material that was covered in the initial training is not documented. Please see the initial January 2008 Leak Detection Document Revision/Awareness Training, attached, for the addition of the leak detection system. The January 2008 Leak Detection Document Revision/Awareness Training notes a document revision to the Product Pipeline Unit Propane Pipeline System Normal Operation procedure, attached, and awareness training. This would indicate that there was initial training. In addition, the annual leak detection inspection (which is inspected at an increased inspection rate than the five (5) year suggested interval in API RP 1130 section 6.2.3) would be considered continued training since controllers are interacting with the ATMOS system during this testing and would observe the alarms indicating Bbl/hr leak rate and the distance to the leak.

The controllers are able and instructed to shut down the pipeline and alert the Shift Supervisor to begin response actions, if a leak is suspected due to a leak alarm provided by the ATMOS Leak Detection system. No additional training is required for this reaction."

None of the information described by DTI above is documented in a DTI procedure.

DTI's procedures did not include guidance for meeting the requirements of API RP 1130, Section 6.5.

DTI Response:

DTI promptly acted after this issue was identified as a concern by the PHMSA Inspector. DTI began reviewing procedures, training, and records after the PHMSA Inspector initially identified the concern. DTI has evaluated its CPM Leak Detection Training and developed an updated training module to ensure it meets the requirements of API RP 1130 Section 6.5 and to educate controllers on the ATMOS CPM Leak Detection system. This training is now recorded in DTI's Learning Management System (LMS) for improved record keeping. The CPM Leak Detection alarm response and evaluation was added to the Hastings Control Room Management Plan and was addressed during the leak detection training.

DTI appreciates that after careful consideration of the circumstances and supporting documentation that PHMSA has decided not to pursue a civil penalty at this time. DTI will address the remedial requirements of the Proposed Compliance Order in a subsequent response. This subsequent response will contain the specific noted procedural and training modifications stated above. The Proposed Compliance Order remedial requirements to ensure the compliance of DTI with the pipeline regulations were listed as the following:

1. In regard to Item Number 1 of the Notice pertaining to failure to provide sufficient guidance for operating, maintaining, testing, record keeping, and dispatcher training of the system, as required by §195.444, CPM leak detection, DTI must amend its procedures to address the requirements of API RP 1130.
2. DTI must establish the procedures required in Item 1 above within 90 days after receipt of the Final Order, and then submit those procedures to PHMSA for review, possible revision, and eventual approval by PHMSA.
3. DTI must then apply those approved procedures after PHMSA approves the procedures as described in Item 2 above. DTI must also submit records, as required by the amended procedures, to PHMSA for review. This must be accomplished within 270 days after the procedures are approved by PHMSA.
4. It is requested (not mandated) that DTI maintain documentation of the safety improvement costs associated with fulfilling this Compliance Order and submit the total to Byron E. Coy, Director, ER, Pipeline and Hazardous Materials Safety Administration. It is requested that these costs be reported in two categories: l)

total cost associated with preparation/revision of plans, procedures, studies and analyses, and 2) total cost associated

If you have any questions, or should require additional information, please do not hesitate to contact Eric Taylor at (681) 842-3034.

Respectfully,

Brian C. Sheppard
Vice President, Pipeline Operations
Dominion Transmission, Inc.