Enterprise Products

ENTERPRISE PRODUCTS PARTNERS L.P.
ENTERPRISE PRODUCTS HOLDINGS LLC
(General Partner)

ENTERPRISE PRODUCTS OPERATING LLC

Via Federal Express and e-mail to Mary.McDaniel@dot.gov

February 28, 2018

Pipeline and Hazardous Materials Safety Administration
U.S. Department of Transportation
8701 S. Gessner, Suite 630
Houston, TX 77074

Attn: Ms. Mary McDaniel
Director, Southwest Region, PHMSA

Re: CPF 4-2017-5035
Notice of Probable Violation, Proposed Civil Penalty, and Proposed Compliance Order
Enterprise Products Operating, LLC

Dear Ms. McDaniel,

Enterprise Products Operating, LLC (Enterprise or the Company) is in receipt of the above referenced Notice of Probable Violation (NOPV), Proposed Civil Penalty (PCP), and Proposed Compliance Order (PCO) dated November 2, 2017, and PHMSA's subsequent January 29, 2018 letter granting Enterprise an extension of time to respond until February 28, 2018. This letter constitutes Enterprise's timely written response to Items 1, 3, 4 and 5 of the subject enforcement action. Under separate cover Enterprise is submitting a request for informal consultation and hearing regarding Item 2 of the NOPV.

Enterprise sets out the text of Items 1, 3, 4, and 5 of PHMSA's NOPV followed by its response.

NOPV Item 1:

§195.507 Recordkeeping

Each operator shall maintain records that demonstrate compliance with this subpart.
(a) Qualification records shall include:
(3) Date(s) of current qualification; and
(b) Records supporting an individual's current qualification shall be maintained while the individual is performing the covered task. Records of prior qualification and records of individuals no longer performing covered tasks shall be retained for a period of five years.

A review of Appendix H of Enterprise's Operator Qualification plan (OQ) revealed that three of the OQ reports listed there do show that current qualification records for individuals performing those covered tasks under the mutual assistance requirements of the plan were not on record. The affected OQ records are for Koch Pipeline (last reviewed on 06/27/2011), Conoco Phillips (last reviewed on 05/10/2011) and Energy Transfer (Lone Star NGL last reviewed on 7/28/2011). Section 4 of the OQ plan under

the subtitle of "Covered Tasks" states that at a minimum the established reevaluation frequency will not exceed 5 years. Hence the listed OQ records above all expired in 2016 (Koch- 06/27/2016, Conoco Phillips- 05/10/2016, Energy Transfer - 07/28/2016) and no requalification 69,records had been obtained at the time of this inspection.

Enterprise Response to NOPV Item 1:

Enterprise has updated Section 17 (*Mutual Assistance*) of the Company's Operator Qualification Manual to be in line with the PHMSA FAQ # 1.9 on mutual assistance. Section 17 now defines the situations under which the qualified employees of other regulated pipeline operators may be required to perform work on Company facilities, and indicates the procedure to be followed if the individuals are not qualified for the Covered Tasks. In addition, Appendix H has been updated and will be identified as reserved for future use. Copies of the updated Section 17 and Appendix H are attached.

NOPV Item 3:

§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. This manual shall be reviewed at intervals not exceeding 15 months, but at least once each calendar year, and appropriate changes made as necessary to insure that the manual is effective. This manual shall be prepared before initial operations of a pipeline system commence, and appropriate parts shall be kept at locations where operations and maintenance activities are conducted.

Enterprise Products Operating, LLC failed to update its procedure for "close interval potential survey specification" CP 05 to ensure it was effective for all close interval potential surveys even after realizing from survey records in 2015 that the procedure was the source of errors in measurements taken while carrying out a close interval survey on the Chaparral pipeline system.

Enterprise representatives stated during a meeting on August 16, 2017 with PHMSA that results from a close interval survey on the portion of the Chaparral pipeline between Mont Belvieu and Bryan Texas carried out in February through march of 2015 included errors and resulted in elevated AC measurements which could be attributed to the #32-gauge wire which was run underneath high voltage power lines. A follow up survey conducted on July 30, 2015 showed some of the readings being much lower than initially taken at those locations. Enterprise's personnel stated that this error could be directly attributed to the procedure and proffered to make the required changes to the procedure to avoid any such errors to the survey readings in the future. A copy of the corrected procedure was submitted to PHMSA on September 12, 2017 and reflected the changes made on August 24, 2017.

Enterprise products operating, LLC failed to make the required update to its procedure for over 2 years even when they were aware of needed update and carried out other surveys using the same procedure.

Enterprise Response to NOPV Item 3:

PHMSA asserts that:

1. "Enterprise Products Operating, LLC failed to update its procedure for 'close interval potential survey specification'.....even after realizing from survey records in 2015 that the procedure was the source of errors in measurements taken while carrying out a close interval survey on the Chaparral pipeline system."

2. "Enterprise's personnel stated that this error could be directly attributed to the procedure and proffered to make the required changes to the procedure to avoid any such error to the survey readings in the future."

3. "Enterprise Products Operating, LLC failed to make the required update to its procedure for over 2 years even when they were aware of needed update and carried out other surveys using the same procedure."

Summary

Enterprise respectfully contends that this warning item reflects a misunderstanding of the facts and circumstances surrounding the February to March 2015 CIS, Enterprise's response to that CIS, and the Company's corrosion control procedures. Enterprise's CIS contractor performed some additional AC potential measurements that were not required or requested by Enterprise, and which Enterprise later determined were performed incorrectly. These unsolicited measurements led to errors in the AC potential data collected. Enterprise discovered these errors, performed follow-up surveys to confirm there were no actionable AC potentials, and provided guidance to the CIS contractor.

In the text below, Enterprise provides corrections for the record and respectfully requests, on that basis, that PHMSA withdraw this warning item. Withdrawal of this item is necessary to prevent misunderstandings from persisting in the record and leading the public and PHMSA to believe there are corrosion control compliance and safety problems on the Chaparral pipeline system when, in fact, there are not.[1] Enterprise intends to raise this Item at the hearing in this matter as the Company believes that further discussion will help to clarify the circumstances.

Enterprise's response on Item 3 is also responsive to PHMSA's concerns outlined in Item 5.

The 2015 CIS

A CIS is a means of evaluating the effectiveness of a cathodic protection system by taking measurements of direct current (DC) electrical potentials between the pipeline and the ground every few feet along the pipeline. During a CIS a corrosion technician connects a thin copper wire (CIS wire) to the pipeline (via a test station or above ground appurtenance) and then walks the pipeline and takes DC pipe-to-soil readings from the CIS wire every few feet. The CIS wire

[1] PHMSA has demonstrated its authority to withdraw warning items where the facts do not support a probable violation. *See In the Matter of Buckeye Partners*, CPF No. 4-2012-5015 (Oct. 18, 2012); *In the Matter of Conoco Phillips*, CPF No. 5-2004-5009 (Sept. 20, 2006); *In the Matter of Natural Gas Pipeline Co.*, CPF No. 23103 (Aug. 18, 1997); *In the Matter of ExxonMobil*, CPF No. 5-2005-5008 (Jan. 9, 2007); *In the Matter of Bridger Pipeline*, CPF NO. 5-2009-5034 (Aug. 30, 2012).

allows a connection to the pipe, without having to expose the pipeline along the ROW. A CIS provides information about the levels of cathodic protection all along the pipeline, and provides more granular information than annual test station readings.

In 2015, Enterprise arranged for its CIS contractor to perform a CIS on a portion of the Chaparral pipeline.[2] Enterprise instructed its contractor to use the Company procedure "Close Interval Potential Survey Specification CP05."[3] That procedure sets out how contractors and employees must perform a CIS, and specifies that DC pipe-to-soil potential measurements must be made between the pipeline (via the CIS wire) and the soil every few feet.[4] The procedure also required collection of AC pipe-to-soil potentials, but only at the location of "all above-ground appurtenances," and not along the right-of-way where the pipeline is buried (i.e. not from the CIS wire).[5]

The CIS contractor collected AC potentials at above-ground appurtenances, as required by CP05.[6] However, the contractor also collected AC pipe-to-soil potentials away from these appurtenances, out along the pipeline. Enterprise did not request this additional activity and the CP05 procedure did not require it. Enterprise learned that the contractor collected these extra AC potentials by connecting to the CIS wire. While this is the required and appropriate practice for DC potentials, it can lead to inaccurate results when used to measure AC potentials. When AC potentials are taken from the CIS wire in locations near HVAC power lines, induced AC current on the wire can produce incorrect results that show artificially high AC potentials.

When Enterprise reviewed the results of the February to March 2015 CIS, the company noticed abnormal AC potential results.[7] These results prompted Enterprise to investigate the source of the results in July 2015 by sending a corrosion technician to spot check some of the areas in which the erroneous readings appeared.[8] The results of that effort demonstrated that the abnormal readings were no longer present.[9] Enterprise corrosion experts believe that the abnormally high AC potentials from the February to March 2015 CIS were caused by AC current induced on the CIS wire, and the resulting incorrect reading of AC potentials.

Adequacy of the CIS Procedure

Enterprise's CP05 CIS procedure was adequate at the time of the 2015 CIS. The erroneous readings during the February to March 2015 CIS resulted from the contractor performing additional work that Enterprise did not request, and performing that work incorrectly. The CP05 procedure specified that AC potentials be collected "at all above ground appurtenances."[10] It

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[2] *See* attached February 2, 2015 e-mail from Jason Brightwell of Enterprise to Bud Dupree, of Coastal Corrosion, Inc. This e-mail transmitted, among other things, version 7 of the CP05 procedure to Coastal. Enterprise updated the CP05 procedure later in February 2015, but the provision regarding AC potentials did not change.

[3] CP05 (Version 7, June 3, 2014).

[4] CP05 section 3.2.7 (Version 7, June 3, 2014).

[5] *See* CP05 section 3.2.10 (Version 7, June 3, 2014). CP05 provided that "Alternating current (AC) pipe-to-soil potentials shall also be recorded at all above ground appurtenances."

[6] *Id.*

[7] *See* attached July 23, 2015 Remedial Action Form (CPP-GEN-01-FORM Revision 3).

[8] *Id.*

[9] *Id.* The July 23, 2015 Remedial Action Form provides "After re-testing this area, no high AC readings were found. Results are that the CIS readings were false possibly due to survey wire[.]"

[10] CP05 section 3.2.10 ((Version 7, June 3, 2014).

was clear from the procedure that these AC measurements were only to be collected where there was actually an above ground appurtenance, and not out along the pipeline where there were none. The contractor was not following guidance from the CP05 procedure when collecting the unsolicited AC potential measurements

In the NOPV and Violation Report, PHMSA seems to have formed a misunderstanding about Enterprise's view of the role of the CP05 procedure. In the NOPV and Violation Report, PHMSA stated that Enterprise personnel acknowledged that the erroneous readings resulted from problems with the CP05 procedure. In fact, Enterprise personnel stated that the Company worked with its contractors to ensure that they understood that the CP05 procedure only required the collection of AC pipe-to-soil potentials at above ground appurtenances through a direct connection. Enterprise also stated that, in an effort to share knowledge, the Company had commented to the CIS contractor that the way in which they collected AC measurements, through the CIS wire, could likely result in inaccurate readings.

Also, contrary to the NOPV, Enterprise has routinely reviewed and updated the CP05 procedure, as demonstrated by the CP05 document change log and annual review sign off sheets provided to PHMSA. The CP05 procedure change log clearly demonstrates that revisions occurred in 2010, 2011, 2012, 2014, 2015, 2016 and 2017, and it is noted that multiple revisions occurred in 2012 and 2014. After the August 2017 meeting between Enterprise and PHMSA personnel, Enterprise elected to make a minor change to the CP05 procedure to clarify that the AC pipe-to-soil potentials be collected "with a direct local electrical connection," which made it physically impossible to collect AC pipe to soil potential measurements along the pipeline right of way.[11] To be clear, Enterprise made this change at PHMSA's request and believes that the language in CP05 in effect at the time of the February to March, 2015 CIS was sufficient to inform contractors of their responsibility.

Conclusion

On the basis of the foregoing, Enterprise respectfully requests that PHMSA withdraw Item 3.

NOPV Item 4:

> ***§195.452 - Pipeline Integrity Management in high consequence areas***
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> ***(b) Each operator of a pipeline covered by this section must:***
>
> ***(1) Develop a written integrity management program that addresses the risks on each segment of pipeline in the first column of the following table not later than the date in the second column:***
>
> ***(4) Include in the program a framework that-***
>
> ***(ii) Initially indicates how decisions will be made to implement each element.***
>
> ***(5) Implement and follow the program***
>
> *Enterprise Products Operating LLC failed to follow its Line Pipe Risk Analysis procedure (IM Procedure 2-01 L) developed as part of its Integrity Management Program to address risks on its Pipeline systems and in this particular case the Maljamar to*

[11] CP05 section 4.3.9 (Version 11, December 8, 2017). Version 11 is the latest version of CP05. The referenced change was made in Version 10, on August 24, 2017.

Maljamar Launcher segment. Records for the Information Analysis carried out on December 4,2014 includes information from the risk assessment completed for this line segment and incorporated as part of the information analyzed in the report which shows a high probability risk score of 10 out of a total score of 10 for the threat of Stress Corrosion Cracking(SCC). The report attributed the excessively high score to the lack of available information on the coating type on the line segment thereby allowing for a misguided review from the reviewing personnel. However, a review of records for Coating and CP source provided by Enterprise during the screening exercise showed that the information on the coating type for this Line segment was available and showed it to be Coal Tar Enamel which if properly entered in the risk assessment would have allowed for the analyst to consider the score and be properly guided in evaluating the condition of the line at the time.

The IM procedure 2-01L in section 2-01.2.2 requires the Pipeline Integrity Engineer to be responsible for the collection of this data from about 12 sources and provides for the validation of the Risk analysis results and data inputted to ensure that the process works well.

Information Analysis carried out on December 4,2014 for the Maljamar to Maljamar Launcher segment includes the record of the risk assessment for the threat of Stress Corrosion Cracking with a probability score of 10 out of a total of 10 and the note stating the coating type was unknown allowing for a misguided review from the analyst reviewing the information

Enterprise Response to NOPV Item 4:

PHMSA alleged that "Enterprise Products Operating LLC failed to follow its Line Pipe Risk Analysis Procedure (IM Procedure 2-01L) developed as part of its Integrity Management Program to address risks on its [p]ipeline systems..."[12] PHMSA alleged that information on the coating type for the Maljamar to Maljamar Launcher segment was available on cathodic protection records but not used in an integrity management risk analysis.

PHMSA alleges a probable violation of § 195.452(b)(1), (4), and (5) yet § 195.452(b) is focused on the initial steps that an operator must take to set up an integrity management program. As PHMSA acknowledges in its guidance to its inspectors, section 195.452(b) applies to "...newly constructed pipelines, or pipelines which formerly had no segments that could affect HCAs but now have such segments."[13] The pipeline subject to this NOPV is neither a newly constructed pipeline nor a pipeline which previously had no "could affect" HCA segments.

PHMSA also states in its guidance that if there is an alleged deficiency in an operator's integrity management plan, the agency's inspectors should cite the specific code section that sets out that procedural requirement, not § 195.452(b).[14] Here, PHMSA cites Enterprise for a probable violation of § 195.452(b) but at no time does PHMSA state that Enterprise did not develop an IM program (§ 195.452(b)(1)), provide a framework to address each element of its IM program (§ 195.452(b)(4)), or implement its program (§ 195.452(b)(5)).

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[12] NOPV, at 4.
[13] PHMSA Hazardous Liquid Integrity Management Enforcement Guidance, at 24.
[14] *Id.*, at 25.

PHMSA has incorrectly cited the referenced procedure that was reviewed during the inspection (attached). PHMSA states "The IM Procedure 2-10L in section 2-01.2.2 requires the Pipeline Integrity Engineer to be responsible for the collection of this data from about 12 sources ....."[15]. However, the procedure actually states "The Pipeline Integrity Engineer will determine the appropriate source(s) for the collection of the data needed to support the risk assessment algorithm. The data for the risk assessment may be gathered from, but not limited to, the following sources" including cathodic protection surveys.[16] The procedure requires that the Pipeline Integrity Engineer evaluate data sources and gather the data from sources where appropriate. The procedure does not require that the Pipeline Integrity Engineer use cathodic protection survey data in all cases – only those cases where the Pipeline Integrity Engineer has evaluated this data and determined it adequately represents the Company's understanding of conditions along the pipeline segment from a risk assessment standpoint. For a reliable relative risk model, data must be evaluated and selected consistently. While capturing and incorporating some data, such as the coating type encountered in a few excavations, may add value to some programs, this data may be inappropriate to enter into a relative risk model. In other words, the level of data valuable to corrosion prevention personnel is not always appropriate for use in risk analysis. Here, the limited coating data collected from the cathodic protection records was not a representative sample to demonstrate coating type along the entire line.

Furthermore, PHMSA has alleged that the omission of coating type led to a probability risk score of 10 for Stress Corrosion Cracking (SCC), the highest value and a conservative assumption, allowing for a misguided review of the information. However, in the Information Analysis where risk data is part of the review process for Preventive and Mitigative Measure determination, the Pipeline Integrity Engineer did not recommend any additional preventive or mitigative measures for SCC, indicating that a "misguided review" (sic) did not happen.

The line segment in question is 529 feet long, constructed from 3 inch diameter pipe that operated at approximately 26% Specified Minimum Yield Strength (SMYS) until being idled with nitrogen in 2017. Furthermore, had the reviewing Pipeline Integrity Engineer determined that the coating type (asphalt enamel) noted in the cathodic protection records *was* suitable for the risk assessment, the result of the threat assessment for SCC would have been no different (No Preventive and Mitigative Measures or integrity assessment to identify SCC necessary) since the stress from operating pressure is well below the threshold (approximately 60% SMYS) for SCC to occur regardless of coating type.

In summary, Enterprise did not fail to follow its IM Procedure 2-01L. As such, Enterprise has not committed a probable violation of 49 CFR 195.452(b) and requests that this item be withdrawn. Withdrawal of this item is necessary to prevent misunderstandings from persisting in the record and leading the public and PHMSA to believe there are integrity management compliance and safety problems on the Chaparral pipeline system when, in fact, there are not.[17]

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[15] *Id.*

[16] *Id.*

[17] PHMSA has demonstrated its authority to withdraw warning items where the facts do not support a probable violation. *See In the Matter of Buckeye Partners*, CPF No. 4-2012-5015 (Oct. 18, 2012); *In the Matter of Conoco Phillips*, CPF No. 5-2004-5009 (Sept. 20, 2006); *In the Matter of Natural Gas Pipeline Co.*, CPF No. 23103 (Aug. 18, 1997); *In the Matter of ExxonMobil*, CPF No. 5-2005-5008 (Jan. 9, 2007); *In the Matter of Bridger Pipeline*, CPF NO. 5-2009-5034 (Aug. 30, 2012).

NOPV Item 5:

§195.589 - What corrosion control information do I have to maintain

(C) You must maintain a record of each analysis, check, demonstration, examination, inspection, investigation, review, survey, and test required by this subpart in sufficient detail to demonstrate the adequacy of corrosion control measures or that corrosion requiring control measures does not exist. You must retain these records for at least 5 years, except that records related to 195.569, 195.573(a) and (b) and 195.579(b)(3) and (c) must be retained for as long as the pipeline remains in service.

Enterprise Products Operating LLC's corrosion control records for the section of the Chaparral line between Conroe and Mont Belvieu in Texas lacks sufficient details to demonstrate the adequacy of the corrosion control measures in place. A comparison of the close interval survey records conducted on March 12, 2015, with records of AC readings on the remedial action form from July 23, 2015 and the survey report from May 26, 2017(specifically intended to capture readings from locations with high readings on the CIS survey but still no readings were taken at the required locations) in addition to previous annual survey records from 2015 through 2017(scarcely has any AC readings even at the locations with the high readings from the 2015 CIS survey) does present a number of questions concerning the adequacy of the corrosion control measures in place.

During a meeting with Enterprise personnel on August 16, 2017 representatives from Enterprise tried to clarify some of questions posed in these records. Sufficient detail in the records would explain how high AC readings (attributed to errors from the #32-gauge wire and the procedure utilized for the survey) dropped so low without any remediation to the readings recorded on July 23, 201. Also there were no other readings from 3 years of survey at same locations to compare and make a determination of adequacy of the corrosion control measures in place for the protection of the pipeline and safety of personnel carrying out the surveys/testing's. Without the meeting with Enterprise's personnel for clarification, the records independently raise questions on the adequacy of the corrosion control measures in place.

Enterprise Response to NOPV Item 5:

The alleged violation asserts that:

1. "Records...lack sufficient details to demonstrate the adequacy of the corrosion control measures in place. A comparison of the close interval survey records conducted in March 12, 2015, with records of AS readings on the remedial action form from July 23, 2015 and the survey report from May 26, 2017 (specifically intended to capture reading from locations with high readings on the CIS survey but still no readings were taken at the required locations) in addition to previous annual survey records from 2015 through 2017 (scarcely has any AC readings even at the locations with the high readings from the 2015 CIS survey) does present a number of questions concerning the adequacy of the corrosion control measures in place."

As explained during the inspection and in response to Item 3 above, the AC pipe to soil potential measurements collected along the right of way in February to March 2015, by the CIS contractor were unsolicited and were not performed in accordance with the CP05 procedure. Upon receiving the unsolicited AC pipe to soil potential measurements collected along the right of way, Enterprise inquired about how the contractor collected this data. Enterprise determined the measurements taken were not accurate or reliable and Enterprise took action to verify this determination with a follow-up survey in July 2015 to spot-check locations covered in February and March 2015. After taking several measurements in the field, Enterprise verified that the unsolicited AC pipe to soil potential measurements collected along the right of way by the contractor were inaccurate and that no elevated AC potentials existed.

Based on the foregoing, and on Enterprise's response to Item 3, Enterprise respectfully requests that PHMSA withdraw this warning item. Withdrawal of this item is necessary to prevent misunderstandings from persisting in the record and leading the public and PHMSA to believe there are corrosion control compliance and safety problems on the Chaparral pipeline system when, in fact, there are not.[18] Enterprise intends to raise this Item at the hearing in this matter as the Company believes that further discussion would help to clarify the circumstances.

Safety Improvement Costs:

> *It is requested (not mandated) that Enterprise Products Operating, LLC maintain documentation of safety improvement costs associated with fulfilling this Compliance Order and submit the total to Terri Binns, Acting Director, Southwest Region, Pipeline and Hazardous Materials Safety Administration. It is requested that these costs be reported in two categories: 1) total cost associated with preparation/revision of plans, procedures, studies and analyses, and 2) total cost associated with replacements, additions and other changes to pipeline infrastructure.*

Enterprise Response to Safety Improvement Costs:

> Enterprise experienced no additional cost to amend the programs and procedures provided in response to this letter other than the normal cost of personnel time.

Should you have any questions, require further information in connection with the above or wish to discuss this matter in greater detail, please do not hesitate to contact our office. Enterprise welcomes the opportunity to discuss this response with PHMSA if further clarification is required.

Sincerely,

Graham W. Bacon
Executive Vice President, Operations & Engineering

[18] PHMSA has demonstrated its authority to withdraw warning items where the facts do not support a probable violation. *See In the Matter of Buckeye Partners*, CPF No. 4-2012-5015 (Oct. 18, 2012); *In the Matter of Conoco Phillips*, CPF No. 5-2004-5009 (Sept. 20, 2006); *In the Matter of Natural Gas Pipeline Co.*, CPF No. 23103 (Aug. 18, 1997); *In the Matter of ExxonMobil*, CPF No. 5-2005-5008 (Jan. 9, 2007); *In the Matter of Bridger Pipeline*, CPF NO. 5-2009-5034 (Aug. 30, 2012).

cc: Jeff Morton, Sr. Director, Transportation Compliance, Enterprise Products Operating, LLC
Zachary L. Craft, Esq., Counsel, Enterprise Products Operating, LLC
Jim Curry, Esq., Babst, Calland, Clements & Zomnir, PC

Attachments

- Enterprise Operator Qualification Manual Section 17 *Mutual Assistance* and Appendix H *Reserved*
- February 2, 2015 e-mail from Jason Brightwell of Enterprise to Bud Dupree, of Coastal Corrosion, Inc.
- Enterprise Close Interval Potential Survey Specification CP05 (Version 7, June 3, 2014).
- July 23, 2015 Remedial Action Form (CPP-GEN-01-FORM Revision 3).
- Enterprise IM Procedure 2-01L *Line Pipe Risk Analysis Procedure*