NOTICE OF PROBABLE VIOLATION
and
PROPOSED COMPLIANCE ORDER

VIA ELECTRONIC MAIL TO: crader@enmarkenergy.com; jtharpe@enmarkenergy.com

July 28, 2023

Connell Rader
President, Enmark Energy, Inc.
104 First Choice Drive
Madison, MS 39110

CPF 2-2023-011-NOPV

Dear Mr. Rader:

From November 1 to November 4, 2021, a representative of the Pipeline and Hazardous Materials Safety Administration (PHMSA) pursuant to Chapter 601 of 49 United States Code (U.S.C.) inspected your procedures, records, and facilities in Mississippi.

As a result of the inspection, it is alleged that you have committed probable violations of the Pipeline Safety Regulations, Title 49, Code of Federal Regulations (CFR). The items inspected and the probable violations are:

1. § 195.440 Public Awareness

(a) . . .
(b) The operator's program must follow the general program recommendations of API RP 1162 and assess the unique attributes and characteristics of the operator's pipeline and facilities.

Enmark failed to meet the regulation because it did not assess the unique attributes and characteristics of its pipeline facilities in its Public Awareness Program baseline message

brochures provided to the affected public. Specifically, Enmark's baseline message brochures provided to the affected public describe natural gas, highly volatile liquids (HVL), and hazardous liquids. Enmark exclusively transports carbon dioxide in Mississippi.

At the time of PHMSA's inspection, the baseline message brochures provided to the affected public contained one booklet and one leaflet. The booklet contained a section titled "How to recognize a pipeline leak." The referenced section described how to recognize pipeline leaks using "sight, sound, and smell" for natural gas, HVLs, and hazardous liquids. Carbon dioxide is not explicitly described in this section. Additionally, the leaflet described "Products Transported in Your Area" and specified "Carbon Dioxide" and "Natural Gas". The leaflet showed a system map that included Pennsylvania, Maryland, West Virginia, Louisiana, Texas, Arkansas, Tennessee, and Mississippi; however, the map did not distinguish which product is in its Mississippi pipeline.

2. § 195.452 Pipeline integrity management in high consequence areas.

(a) . . .
(i) What preventive and mitigative measures must an operator take to protect the high consequence area?
(1) . . .
(3) Leak detection. An operator must have a means to detect leaks on its pipeline system. An operator must evaluate the capability of its leak detection means and modify, as necessary, to protect the high consequence area. An operator's evaluation must, at least, consider, the following factors—length and size of the pipeline, type of product carried, the pipeline's proximity to the high consequence area, the swiftness of leak detection, location of nearest response personnel, leak history, and risk assessment results.

Enmark failed to meet the regulation because it did not evaluate the capability of its leak detection means.

Enmark was unable to produce a record at the time of inspection that documented an evaluation of the capability of its leak detection means. In an email from Enmark, dated 01/13/2022, Enmark stated that "...on the IM Risk score records or any record relating to the use of the Muhlbauer risk model and the Documentation regarding the leak detection capability evaluation, we have yet to develop those scores or models." Furthermore, Enmark's Operations and Maintenance Manual and its Integrity Management Procedures did not have a means to evaluate its leak detection capability.

3. § 195.452(l): What records must an operator keep to demonstrate compliance?

(1) An operator must maintain, for the useful life of the pipeline, records that demonstrate compliance with the requirements of this subpart. At a minimum, an operator must maintain the following records for review during an inspection:
(i) . . .
(ii) Documents to support the decisions and analyses, including any modifications, justifications, deviations, and determinations made, variances, and actions taken, to implement and evaluate each element of the integrity management program listed in paragraph (f) of this section.

Enmark failed to meet the regulation because it did not maintain documents to support the decisions and analyses of its integrity management program. Specifically, Enmark did not have any documents demonstrating how it performed its risk assessment as a part of its integrity management program.

Enmark's Integrity Management Program, Section 5, titled "Risk Assessment Process," dated December 2017, prescribed actions to evaluate the risk associated with HCAs determined to be potentially impacted by a CO_2 pipeline release. Section 5.4.2, titled "Risk Assessment Description", stated "For each IMP risk assessment evaluation, Enmark will use a modified Muhlbauer model as the basis for assessing the relative risks of each pipeline segment...Individual scores for the Indices described above are determined for each pipeline segment and can range from 0 to 100."

Enmark produced form 900.001, titled "IMP Threat Analysis," which documented various information regarding threats to its pipeline. It did not, however, describe the use of the Muhlbauer model as a basis for assessing relative risks for each pipeline segment or document any individual scores for risk indices. Enmark could not produce any records demonstrating the use of the Muhlbauer model at the time of the inspection. Furthermore, in an email from Enmark on 01/13/2022, Enmark stated "...on the IM Risk score records or any record relating to the use of the Muhlbauer risk model and the Documentation regarding the leak detection capability evaluation, we have yet to develop those scores or models."

4. § 195.452(l): What records must an operator keep to demonstrate compliance?

(1) An operator must maintain, for the useful life of the pipeline, records that demonstrate compliance with the requirements of this subpart. At a minimum, an operator must maintain the following records for review during an inspection:
(i) . . .
(ii) Documents to support the decisions and analyses, including any modifications, justifications, deviations, and determinations made, variances, and actions taken, to implement and evaluate each element of the integrity management program listed in paragraph (f) of this section.

Enmark failed to meet the regulation because it did not maintain documents to support the decisions and analyses of its integrity management program. Specifically, Enmark did not have records that measure if the integrity management program is effective in assessing and evaluating the integrity of its pipeline as required by its integrity management program and §195.452(k).

Enmark's Integrity Management Program, Section 11, titled "Program Evaluation Measures," dated December 2017, prescribed actions required to evaluate the effectiveness of its IMP program, as required by §195.452(k). Section 11.8 stated "The results of performance measurements and audits, including all follow-up recommendations, will be reported to those individuals within Enmark who are responsible for pipeline integrity and operations. Organizational lines of responsibility are described in Enmark's O&M Manuals and in supplemental IMP support documentation. Performance will be reviewed at least annually, and issues addressed."

Enmark could not produce any records of the annual integrity management program performance reviews at the time of inspection. In an email from the operator dated 01/13/2022, Enmark stated "...other than our annual reviews of the IM manual itself, we have not developed any evaluations on program effectiveness as described in Section 11.8."

5. § 195.588 What standards apply to direct assessment?

(a) . . .
(b) The requirements for performing external corrosion direct assessment are as follows:
(1) General. You must follow the requirements of NACE SP0502 (incorporated by reference, see § 195.3). Also, you must develop and implement a External Corrosion Direct Assessment (ECDA) plan that includes procedures addressing pre-assessment, indirect examination, direct examination, and post-assessment.

Enmark failed to meet the regulation because it did not follow the requirements of NACE SP0502-2010 when it performed an external corrosion direct assessment (ECDA) in 2018. Specifically, Enmark did not remove the coating and clean the pipe surface prior to

identifying and mapping corrosion defects, and did not record all direct examination actions, as required by NACE SP0502, Section 5.

NACE SP0502-2010, Section 5, titled “Direct Examination” prescribed requirements for the Direct Examination Step when performing an ECDA. Section 5.1.2 stated “The Direct Examination Step requires excavations to expose the pipe surface so that measurements can be made on the pipeline and in the immediate surrounding environment.” Section 5.5.3.3 stated “Prior to identifying and mapping corrosion defects, the pipeline operator shall remove the coating and clean the pipe surface.” Section 7.4.1 stated that “All direct examination actions should be recorded.”

Five total anomalies were excavated as a part of the Direct Examination step of the ECDA. Enmark’s “Pipe Inspection Report” for each anomaly documented the various direct examination actions. The Pipe Inspection Report for Anomaly #10, dated 07/24/2019, did not describe or document through photographs that the coating had been removed to expose the pipe surface. The Pipe Inspection Reports for Anomaly 29, 55, 56, and 57 demonstrated removed coating to some degree, but did not describe or document through photographs how the surface of the pipe was cleaned prior to identifying and mapping corrosion defects.

6. § 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.

Enmark failed to meet the regulation because it did not follow its manual of written procedures to prepare the pipeline surface for coating repair.

Enmark’s Operating & Maintenance Procedures, Section 50, page 50-6, titled "Repair of Coatings,” dated 03/22/2019, prescribed actions to repair coatings on its pipeline. Step #5 of this procedure required Enmark to "Clean surface to specified requirements," step #7 stated "Apply the coating following the manufacturer's specifications," and step #9 stated “ensure all coatings are compatible.” Enmark form 500.022, titled “Pipeline Inspection – External Pipe Condition” documented “Pipe Cleaning and Examination.” For Anomaly 10, dated 07/24/2019, the surface preparation listed on Enmark form 500.022 was “wire brush.” Enmark form 500.024, titled “Pipeline Inspection – Repair Details” documented repair information for Enmark’s pipeline. For Anomaly 10, dated 07/24/2019, the repair listed on 500.024 was recoating with “Protal 7200 2-part epoxy/Trenton Wax Tape.”

Enmark's procedure did not specify what "specified requirements" are for cleaning the surface of the pipe prior to recoating. Per the Denso Protal 7200 product data sheet, application section, the specified surface preparation was to "Prepare surfaces by grit blasting to a near white finish, SSPC SP-10/NACE No. 2. Appropriate angular grit shall be used to achieve a 2.5 to 5 mil (63 to 127 microns) anchor profile." At the time of inspection, Enmark indicated that the pipe had not been grit blasted and there was no record of an anchor profile.

Furthermore, Enmark's procedures did not contain a list of operator approved coatings. Enmark's Operating & Maintenance Procedures, Section 50, page 50-7 states "Ensure that all coatings used are compatible." No documentation was presented during the inspection regarding the compatibility of coal tar (the original unremoved coating), coated with Denso Protal 7200, coated with Trenton Wax Tape.

7. § 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.

Enmark failed to meet the regulation because it did not follow its manual of written procedures for right-of-way patrols. Specifically, Enmark failed to document its right-of-way patrols as required by its procedures.

Enmark's Operating & Maintenance Procedures, Section 47, titled "Pipeline maintenance activities: Pipeline Patrols: Field requirements," dated 08/21/2021, prescribed actions to perform and document pipeline patrols as required by §195.412. Item 2 in this procedure prescribed: "The required frequency of inspection of the surface conditions on or adjacent to each CO2 or Hazardous Liquid pipeline right-of-way rights-of-way and crossings under navigable waters is as follows: (a) At intervals not exceeding 3 weeks, but at least 26 times each calendar year." Item 8 in this procedure prescribed: "The personnel performing the patrol shall complete the Company form titled Pipeline Patrol and Leak Survey Report and submit the report to the corporate office, as required."

Enmark had three instances where it did not document that it had performed its pipeline patrols at intervals not exceeding 3 weeks:

Sandhill Line
2017: 11-07-2017 to 11-29-2017 (22 days)

2018: 10-03-2018 to 10-27-2018 (24 days)

Matheson Line
2017: 11-07-2017 to 11-29-2017 (22 days)

8. § 195.452 Pipeline integrity management in high consequence areas.

(a) . . .
(b) What program and practices must operators use to manage pipeline integrity? 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 no later than the date in the second column…
(2) . . .
(5) Implement and follow the program.

Enmark failed to meet the regulation because it did not follow its written integrity management program when it performed an external corrosion direct assessment (ECDA) in 2018. Specifically, Enmark did not completely document the data collection of its ECDA pre-assessment, as required by its procedures.

Enmark's Integrity Management Program, Appendix D, titled "ECDA Plan," Section 4.2 titled "Pre-Assessment," dated December 2017, prescribed actions to be taken during the pre-assessment phase of performing an ECDA on its pipeline. Section 4.2.1, titled "Data Collection" stated "The elements in Form ENMARK-900.002 DA Data Form, found in Exhibit A, will be recorded for the Pre-Assessment step." Enmark's form 900.002 DA Data Form for "ECDA Project 1", dated 06/30/2018, listed the various data elements to be collected for an ECDA, including if the data is "applicable" and/or "required." The form had a "Data or Location of Data" column and a "Comments" column. No information was filled out in either of these columns for applicable or required data elements.

Furthermore, Enmark prepared a document titled "External Corrosion Direct Assessment, Pre-Assessment Specifications" to document the pre-assessment step of the ECDA. This document did list some data identified on form 900.002 as "required" for an ECDA but did not list all of the "required" data such as "Soil Characteristics," "Location of major pipe appurtenances," or "Underwater Sections." Additionally, the Pre-Assessment Specifications document did not list all of the "Applicable" information, such as "Construction practices," "Drainage," "Topography," "Pipe Operating Temperature," and "Normal Operating Pressure."

9. § 195.589 What Corrosion control information do I have to maintain?

(a) . . .

(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.

Enmark failed to meet the regulation because it did not maintain a record of each analysis, check, demonstration, examination, inspection, investigation, review, survey, and test for corrosion control. Specifically, Enmark did not maintain records relating to checking the proper performance for its rectifier, as required by § 195.573(c).

Enmark's Operating & Maintenance Procedures, Section 76, titled "Corrosion Control: External Corrosion Control," dated 08/20/2021, prescribed actions to control external corrosion, required by § 195 subpart H. Page 76-9, section (b)(1), stated "Each cathodic protection rectifier or impressed current power source must be inspected six times each calendar year, but with intervals not exceeding 2 1/2 months between inspections, to ensure adequate amperage and voltage levels needed to provide cathodic protection are maintained. This may be done either through remote measurement or through an onsite inspection of the rectifier."

Enmark had two instances where it did not document that it had performed its rectifier inspections at intervals not exceeding 2 ½ months:

Model AAP, Serial# 931541, 05-06-2020 to 07-28-2020 (83 days [2 months, 22 days])
Model AAP, Serial# 931541, 02-13-2020 to 05-06-2020 (83 days [2 months, 22 days])

Under 49 U.S.C. § 60122 and 49 CFR § 190.223, you are subject to a civil penalty not to exceed $257,664 per violation per day the violation persists, up to a maximum of $2,576,627 for a related series of violations. For violation occurring on or after March 21, 2022, and before January 6, 2023, the maximum penalty may not exceed $239,142 per violation per day the violation persists, up to a maximum of $2,391,412 for a related series of violations. For violation occurring on or after May 3, 2021, and before March 21, 2022, the maximum penalty may not exceed $225,134 per violation per day the violation persists, up to a maximum of $2,251,334 for a related series of violations. For violation occurring on or after January 11, 2021, and before May 3, 2021, the maximum penalty may not exceed $222,504 per violation per day the violation persists, up to a maximum of $2,225,034 for a related series of violations. For violation occurring on or after July 31, 2019, and before January 11, 2021, the maximum penalty may not exceed $218,647 per violation per day the violation persists, up to a maximum of $2,186,465 for a related series of violations. For violation occurring on or after November 27, 2018, and before July 31, 2019, the maximum penalty may not exceed $213,268 per violation per day, with a maximum penalty not to exceed $2,132,679. For violation occurring on or after November 2, 2015, and before November 27, 2018, the maximum penalty may not exceed $209,002 per violation per day, with a maximum penalty not to exceed $2,090,022.

We have reviewed the circumstances and supporting documents involved in this case, and have decided not to propose a civil penalty assessment at this time.

Proposed Compliance Order

With respect to items 1, 2, 3, 4, and 5 pursuant to 49 U.S.C. § 60118, the Pipeline and Hazardous Materials Safety Administration proposes to issue a Compliance Order to Enmark Energy, Inc. Please refer to the *Proposed Compliance Order*, which is enclosed and made a part of this Notice.

Warning Items

With respect to items 6, 7, 8, and 9, we have reviewed the circumstances and supporting documents involved in this case and have decided not to conduct additional enforcement actions or penalty assessments proceedings at this time. We advise you to promptly correct these items. Failure to do so may result in additional enforcement action.

Response to this Notice

Enclosed as part of this Notice is a document entitled *Response Options for Pipeline Operators in Enforcement Proceedings*. Please refer to this document and note the response options. Be advised that all material you submit in response to this enforcement action is subject to being made publicly available. If you believe that any portion of your responsive material qualifies for confidential treatment under 5 U.S.C. 552(b), along with the complete original document you must provide a second copy of the document with the portions you believe qualify for confidential treatment redacted and an explanation of why you believe the redacted information qualifies for confidential treatment under 5 U.S.C. 552(b).

Following the receipt of this Notice, you have 30 days to submit written comments, or request a hearing under 49 CFR § 190.211. If you do not respond within 30 days of receipt of this Notice, this constitutes a waiver of your right to contest the allegations in this Notice and authorizes the Associate Administrator for Pipeline Safety to find facts as alleged in this Notice without further notice to you and to issue a Final Order. If you are responding to this Notice, we propose that you submit your correspondence to my office within 30 days from receipt of this Notice. This period may be extended by written request for good cause.

In your correspondence on this matter, please refer to **CPF 2-2023-011-NOPV** and, for each document you submit, please provide a copy in electronic format whenever possible.

Sincerely,

James A. Urisko
Director, Southern Region, Office of Pipeline Safety
Pipeline and Hazardous Materials Safety Administration

Enclosures: *Proposed Compliance Order*
Response Options for Pipeline Operators in Enforcement Proceedings

cc: Jeff Tharpe, Operations Manager - jtharpe@enmarkenergy.com

PROPOSED COMPLIANCE ORDER

Pursuant to 49 U.S.C. § 60118, the Pipeline and Hazardous Materials Safety Administration (PHMSA) proposes to issue to Enmark Energy a Compliance Order incorporating the following remedial requirements to ensure the compliance of Enmark Energy with the pipeline safety regulations:

A. In regard to Item Number 1 of the Notice pertaining to Enmark's failure to assess the unique attributes and characteristics of its pipeline and facilities in its Public Awareness Program baseline message brochures, Enmark must develop and distribute to the affected public new baseline message material that adequately addresses the unique characteristics and attributes of the Carbon Dioxide being transported by Enmark.

Enmark must submit to the Director, Office of Pipeline Safety, PHMSA Southern Region, documentation demonstrating satisfactory completion of this requirement, including at a minimum, a copy of the newly developed baseline message materials and records of their delivery within **90** days of receipt of the Final Order.

B. In regard to Item Number 2 of the Notice pertaining to Enmark's failure to evaluate the capability of its leak detection means, Enmark must develop a written procedure to evaluate the capability of its leak detection means and submit to the Director, Office of Pipeline Safety, PHMSA Southern Region, a copy of the procedure for approval within **90** days of receipt of the Final Order.

Upon approval, Enmark must then evaluate the capability of its leak detection means and submit to the Director, Office of Pipeline Safety, PHMSA Southern Region, documentation demonstrating satisfactory completion of this requirement within **90** days of the written procedure approval by the Director, Office of Pipeline Safety, PHMSA Southern Region.

C. In regard to Item Number 3 of the Notice pertaining to documenting its risk assessment as a part of its integrity management program, Enmark must perform a risk assessment following Enmark's procedural requirements, and submit documentation demonstrating satisfactory completion of this requirement, including at a minimum, documentation showing how the risk scores were calculated, to the Director, Office of Pipeline Safety, PHMSA Southern Region within **90** days of receipt of the Final Order.

D. In regard to Item Number 4 of the Notice pertaining to Enmark's failure to measure the effectiveness its integrity management program, Enmark must perform an effectiveness evaluation of its integrity management program per its procedures, and submit to the Director, Office of Pipeline Safety, PHMSA Southern Region, documentation demonstrating satisfactory completion of this requirement within **90** days of receipt of the Final Order.

E. In regard to Item Number 5 of the Notice pertaining to Enmark's failure to follow the requirements of NACE SP0502-2010, Enmark must re-excavate Anomalies 10 29, 55, 56, and 57 to completely remove the coating, clean the pipe surface, evaluate corrosion, and repair the pipe per applicable sections of NACE SP0502-

2010, Enmark's written procedures, and coating application requirements within **180** days of receipt of the Final Order.

Enmark must notify the Director, Office of Pipeline Safety, PHMSA Southern Region at least **30** days prior to the planned date(s) of the excavations.

Enmark must submit to the Director, Office of Pipeline Safety, PHMSA Southern Region, documentation demonstrating satisfactory completion of this requirement, including at a minimum, pictures showing the removed coating and documentation supporting that repairs were made in accordance with Enmark's procedures, manufacturer's recommendations, and applicable sections of 49CFR Part 195, within **30** days of completing the excavations.

F. It is requested that Enmark maintain documentation of the safety improvement costs associated with fulfilling this Compliance Order and submit the total to James A. Urisko, Director, Southern 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.