



U.S. Department
of Transportation

**Pipeline and
Hazardous Materials Safety
Administration**

233 Peachtree Street Ste. 600
Atlanta, GA 30303

**NOTICE OF PROBABLE VIOLATION
and
PROPOSED COMPLIANCE ORDER**

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

January 14, 2014

Mr. Connell R. Rader
President
Enmark Energy, Inc.
104 First Choice Drive, Suite A
Madison, MS 39110

CPF 2-2014-6002

Dear Mr. Rader:

On August 12-15, & 27, 2013, representatives of the Pipeline and Hazardous Materials Safety Administration (PHMSA), Southern Region, Office of Pipeline Safety (OPS) inspected the Enmark Energy, Inc. (Enmark) Sandhill and Air Liquide Carbon Dioxide (CO₂) pipelines in Madison, Mississippi, pursuant to Chapter 601 of 49 United States Code.

As a result of the inspection, it appears that Enmark has committed probable violations of the Pipeline Safety Regulations, Title 49, Code of Federal Regulations. The items inspected and the probable violations are as follows:

- 1. §195.406 Maximum operating pressure.
... (b) No operator may permit the pressure in a pipeline during surges or other variations from normal operations to exceed 110 percent of the operating pressure limit established under paragraph (a) of this section. Each operator must provide adequate controls and protective equipment to control the pressure within this limit.**

Enmark did not provide adequate controls and protective equipment to control the pressure in its Sandhill and Air Liquide Carbon Dioxide (CO₂) pipelines such that it will not exceed 110 percent of the operating pressure limit established under §195.406 (a)¹ during surges or other variations from normal operations.²

¹ The operating pressure limit established under §195.406 (a) is the maximum operating pressure (MOP).

² PHMSA is not alleging that the pressure in either the Sandhill or Air Liquide Carbon Dioxide pipelines actually exceeded 110% of the MOP at any time.

– Enmark’s Sandhill pipeline:

Denbury Onshore, LLC, (Denbury) operates a pipeline system that feeds CO₂ into the upstream end of Enmark’s Sandhill pipeline. The Denbury pipeline system is equipped with a control room to monitor the pressure of its pipeline system. Denbury also operates a control valve upstream, and prior to, the inlet into the Sandhill pipeline. This valve controls the operating pressure of Enmark’s Sandhill pipeline.

Notwithstanding the above, Enmark did not provide the PHMSA inspectors with any written agreement between Enmark and Denbury concerning the adequate control and protective equipment necessary to control the pressure in the Sandhill pipeline such that it will not exceed 110 percent of the operating pressure limit established under §195.406 (a) during surges or other variations from normal operations.

– Enmark’s Air Liquide pipeline:

Denbury operates a pipeline system that feeds CO₂ into the upstream end of Enmark’s Air Liquide pipeline. The Denbury pipeline system is equipped with a control room to monitor the pressure of its pipeline system, which in turn, controls the operating pressure of Enmark’s Air Liquide pipeline.

Notwithstanding the above, Enmark did not provide the PHMSA inspectors with any written agreement between Enmark and Denbury concerning the adequate control and protective equipment necessary to control the pressure in the Air Liquide pipeline such that it will not exceed 110 percent of the operating pressure limit established under §195.406 (a) during surges or other variations from normal operations.

2. §195.410 Line Markers.

(a) Except as provided in paragraph (b) of this section, each operator shall place and maintain line markers over each buried pipeline in accordance with the following:

(1) Markers must be located at each public road crossing, at each railroad crossing, and in sufficient number along the remainder of each buried line so that its location is accurately known.

Enmark did not place and maintain line markers along the buried Sandhill pipeline in sufficient number so that its location was accurately known.

During the inspection, PHMSA inspectors were not able to accurately determine the location of the Sandhill pipeline downstream of Denbury’s facility. Moreover, Enmark’s line markers were not properly maintained in that several were located in a fence line and visibility was obstructed by vegetation in the fence line.

3. §195.420 Valve maintenance.

(a) Each operator shall maintain each valve that is necessary for the safe operation of its pipeline systems in good working order at all times.

Enmark did not maintain each valve necessary for the safe operation of its Sandhill and Air Liquide CO₂ pipeline systems in good working order at all times.

– Enmark’s Sandhill pipeline:

Enmark’s Sandhill pipeline transports CO₂ to a downstream facility operated by Sandhill. The upstream end of Enmark’s Sandhill pipeline can be blocked-in by a valve (or valves) on the Denbury pipeline system. Sandhill operates a valve with high and low pressure shut-down capability at the entrance to its facility. This valve can be used to block-in the downstream end of Enmark’s Sandhill pipeline.

Notwithstanding the above, Enmark did not provide the PHMSA inspectors with any written agreement between Enmark and Denbury or between Enmark and Sandhill concerning the required maintenance of valves necessary for the safe operation of its Sandhill pipeline.

– Enmark’s Air Liquide pipeline:

Enmark’s Air Liquide pipeline transports CO₂ to a downstream facility operated by Air Liquide. There are two valves on the upstream end of Enmark’s Air Liquide pipeline, which Enmark can use to block-in the upstream end of the pipeline. Air Liquide operates a valve and pressure control devices at its facility. This valve can be used to block-in the downstream end of Enmark’s Air Liquide pipeline.

Notwithstanding the above, Enmark did not provide the PHMSA inspectors with any written agreement between Enmark and Air Liquide concerning the required maintenance of valves necessary for the safe operation of its Air Liquide pipeline.

4. §195.452 Pipeline integrity management in high consequence areas.

... (i) *What preventive and mitigative measures must an operator take to protect the high consequence area?*

... (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 did not have a means to detect leaks on its Air Liquide pipeline system to protect high consequence area(s) as identified in its Integrity Management Program (IMP).

Enmark’s IMP *Section 9.6.3 - Reducing volumes lost from unintentional releases* stated, “...Enmark has a continuously operating condition monitoring program in place that will provide detection of a release and thus facilitate minimizing the volume lost as a result.”

Notwithstanding the above, Enmark relied on Denbury for monitoring the upstream injection of CO₂ into its Air Liquide pipeline and relied on Air Liquide for monitoring the downstream end of its Air Liquide pipeline. Yet, Enmark did not provide the PHMSA inspectors with any written agreements with Denbury or Air Liquide with regards to detecting leaks on its Air Liquide pipeline.

5. **§195.452 Pipeline integrity management in high consequence areas.**

... (l) *What records must be kept?*

(1) An operator must maintain for review during an inspection:

... (ii) **Documents to support the decisions and analyses, including any modifications, justifications, variances, deviations and determinations made, and actions taken, to implement and evaluate each element of the integrity management program listed in paragraph (f) of this section.**

Enmark did not maintain for review during an inspection records required to support its Integrity Management Program (IMP) decisions and analyses.

Enmark's IMP *Section 4 – Identifying Pipeline Segments With Potential HCA Impact* stated, "Enmark adopted previous owner clients dispersion model results in the most conservative manner (i.e. worst case vertical release scenario distance was assumed to occur in the horizontal direction, laterally away from the pipeline leak)." The dispersion model results Enmark used were not available for review during PHMSA's inspection.

6. **§195.505 Qualification program.**

Each operator shall have and follow a written qualification program. The program shall include provisions to:

(a) Identify covered tasks;

(b) Ensure through evaluation that individuals performing covered tasks are qualified;

Enmark did not identify certain Operator Qualification (OQ) covered tasks and did not ensure through evaluation that individuals performing OQ covered tasks on its Sandhill and Air Liquide pipelines were qualified under its Operator Qualification Program (OQP).

Enmark's Sandhill pipeline:

Denbury operates a pipeline system that feeds CO₂ into the upstream end of Enmark's Sandhill pipeline. The Denbury pipeline system is equipped with a control room to monitor the pressure of its pipeline system. Denbury also operates a control valve upstream, and prior to, the inlet into the Sandhill pipeline. This valve controls the operating pressure of Enmark's Sandhill pipeline.

Enmark's Sandhill pipeline transports the CO₂ downstream to a facility operated by Sandhill. Sandhill operates a valve with high and low pressure shut-down capability at the entrance to its facility. This valve can be used to block-in the downstream end of Enmark's Sandhill pipeline. The upstream end of Enmark's Sandhill pipeline can be blocked-in by a valve or valves on the Denbury pipeline.

Notwithstanding the above, Enmark did not have any written or formal agreement with Denbury or Sandhill concerning the operation of the Enmark Sandhill pipeline.

Moreover, Enmark had not determined what covered tasks performed by Denbury or Sandhill personnel would affect the operation and safe shutdown of its Sandhill pipeline. Additionally, Enmark had not ensured through evaluation that the Denbury and/or Sandhill personnel performing these covered tasks were qualified in accordance with the requirements of the Enmark OQ program.

Enmark's Air Liquide pipeline:

Denbury operates a pipeline system that feeds CO₂ into the upstream end of Enmark's Air Liquide pipeline. The Denbury pipeline system is equipped with a control room to monitor the pressure of its pipeline system, which, in turn, controls the operating pressure of Enmark's Air Liquide pipeline.

Enmark's Air Liquide pipeline transports the CO₂ downstream to a facility operated by Air Liquide. There are two valves on the upstream end of Enmark's Air Liquide pipeline, which can be used to block-in the upstream end of the pipeline. Air Liquide operates a valve, a pressure relief valve, and low and high pressure shut-down devices at its facility. The valve can be used to block-in the downstream end of Enmark's Air Liquide pipeline.

Notwithstanding the above, Enmark did not have any written or formal agreement with Denbury or Air Liquide concerning the operation of the Enmark Air Liquide pipeline. Moreover, Enmark had not determined what covered tasks performed by Denbury or Air Liquide personnel would affect the operation and safe shutdown of its Air Liquide pipeline. Additionally, Enmark had not ensured through evaluation that the Denbury and/or Air Liquide personnel performing these covered tasks were qualified in accordance with the requirements of the Enmark OQ program.

7. **§195.505 Qualification program.**

Each operator shall have and follow a written qualification program. The program shall include provisions to:

... c) Allow individuals that are not qualified pursuant to this subpart to perform a covered task if directed and observed by an individual that is qualified;

Enmark did not adequately address the process for allowing individuals that are not qualified to perform an OQ covered task under the direction and observation of a qualified individual.

Enmark's OQP *Section 11 - Non-Qualified Individuals* indicated that it is the responsibility of the OQ qualified person to limit the number of non-qualified individuals performing a given covered task to the span of control ratio indicated in the covered task list; yet, the covered task list did not list any span of control ratios. Additionally, Enmark's OQP *Section 12 - Contractors* stated, "*The contractor must provide span of control acceptable to Enmark Energy while Covered Tasks are performed*" though the program did not indicate what was, or was not, acceptable to Enmark.

Warning Item

With respect to item 2, we have reviewed the circumstances and supporting documents involved in this case and have decided not to conduct additional enforcement actions or penalty assessment proceedings at this time. We advise you to promptly correct this item. Failure to do so may result in additional enforcement actions.

Proposed Compliance Order

With respect to items: 1, 3, 4, 5, 6, and 7 pursuant to 49 United States Code § 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.

Response to this Notice

Enclosed as part of this Notice is a document entitled *Response Options for Pipeline Operators in Compliance Proceedings*. Please refer to this document and note the response options. All material you submit in response to this enforcement action may be 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). 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.

In your correspondence on this matter, please refer to **CPF 2-2014-6002** and for each document you submit, please provide a copy in electronic format whenever possible.

Sincerely,



Wayne T. Lemoie
Director, Office of Pipeline Safety
PHMSA Southern Region

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

PROPOSED COMPLIANCE ORDER

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

1. In regard to Item Number 1 of the Notice pertaining to Enmark's failure to provide adequate controls and protective equipment to control the pressure in its Sandhill and Air Liquide Carbon Dioxide (CO₂) pipelines such that it will not exceed 110 percent of the operating pressure limit established under §195.406 (a) during surges or other variations from normal operations; Enmark must:
 - a. Provide adequate controls and protective equipment to control the pressures in its Sandhill and Air Liquide Carbon Dioxide (CO₂) pipelines such that it will not exceed 110 percent of the operating pressure limit established under §195.406 (a) during surges or other variations from normal operations.

Or

- b. If Enmark continues to rely on Denbury, Air Liquide, and/or Sandhill to provide controls and protective equipment to control the pressure in its pipelines, then Enmark must:
 - i. Develop and implement a written formal agreement between Enmark and Denbury concerning the adequate control and protective equipment necessary to control the pressure in the Air Liquide and Sandhill pipelines such that it will not exceed 110 percent of the operating pressure limit established under §195.406 during surges or other variations from normal operations.
 - ii. Develop and implement a written formal agreement between Enmark and Air Liquide concerning the adequate control and protective equipment necessary to control the pressure in the Air Liquide pipeline such that it will not exceed 110 percent of the operating pressure limit established under §195.406 during surges or other variations from normal operations.
 - iii. Develop and implement a written formal agreement between Enmark and Sandhill concerning the adequate control and protective equipment necessary to control the pressure in the Sandhill pipeline such that it will not exceed 110 percent of the operating pressure limit established under §195.406 during surges or other variations from normal operations.
 - iv. Modify its written operations and maintenance (O&M) procedures, as necessary, to ensure the agreements in Items 1bi, 1bii, and 1biii above are properly developed and implemented.

- v. Complete the actions required by Item 5 to ensure that any Denbury, Air Liquide, and/or Sandhill personnel performing covered tasks on or affecting Enmark's pipelines are properly qualified.
 - vi. Collect and maintain, as required, records to demonstrate compliance with the modified O&M procedures and the written agreement.
2. In regard to Item Number 3 of the Notice pertaining to Enmark's failure to maintain each valve necessary for the safe operation of its Sandhill and Air Liquide CO₂ pipeline systems in good working order at all times; Enmark must:
- a. Provide adequate valves to allow safe operation of its Sandhill and Air Liquide Carbon Dioxide (CO₂) pipelines and maintain each valve in good working order at all times.
- Or
- b. If Enmark continues to rely on Denbury, Air Liquide, and/or Sandhill to provide and maintain valves necessary for the safe operation of its pipelines, then Enmark must:
 - i. Develop and implement a written agreement between Enmark and Denbury concerning the maintenance on the Denbury pipeline system of valves that are required to block-in the upstream end of Enmark's Sandhill pipeline.
 - ii. Develop and implement a written agreement between Enmark and Sandhill concerning the maintenance of valve(s) at the Sandhill facility that are required to block-in the downstream end of Enmark's Sandhill pipeline.
 - iii. Develop and implement a written agreement between Enmark and Air Liquide concerning the maintenance of valve(s) at the Air Liquide facility that are required to block-in the downstream end of Enmark's Air Liquide pipeline.
 - iv. Modify its written O&M procedures, and its Operator Qualification Program (OQP), as necessary, to ensure the agreements in Items 2bi, 2bii, and 2biii above are properly developed and implemented.
 - v. Complete the actions required by Item 5 to ensure that any Denbury, Air Liquide, and/or Sandhill personnel performing covered tasks on or affecting Enmark's pipelines are properly qualified.
 - vi. Collect and maintain, as required, records to demonstrate compliance with the modified O&M procedures, OQP, and the written agreement.
3. In regard to Item Number 4 of the Notice pertaining to Enmark's failure to have a means to continuously monitor and detect leaks on its Air Liquide pipeline system to protect high consequence area(s) in accordance with its IMP; Enmark must:

- a. Provide a means to continuously monitor and detect leaks on its Air Liquide pipeline system.
- Or,
- b. Develop and implement a written agreement between Enmark and Denbury, and/or Enmark and Air Liquide to provide a means to continuously monitor and detect leaks on its Air Liquide pipeline.
 - c. Modify its written O&M procedures, and OQP, as necessary, to ensure the agreement(s) in Item 3a above is/are properly developed and implemented.
 - d. Collect and maintain, as required, records to demonstrate compliance with the modified O&M procedures, OQP, and the written agreement.
4. In regard to Item Number 5 of the Notice pertaining to Enmark's failure to maintain for review during an inspection records required to support its Integrity Management Program (IMP); Enmark must create or gather records to fully support its IMP and make such records available to PHMSA inspectors at the time of an inspection.
 5. In regard to Item Number 6 of the Notice pertaining to Enmark's failure to identify certain Operator Qualification (OQ) covered tasks and to ensure through evaluation that individuals performing covered tasks on its Sandhill and Air Liquide pipelines were qualified under its Operator Qualification Program (OQP); Enmark must:
 - a. Properly and thoroughly identify all OQ covered tasks on its Sandhill and Air Liquide pipelines.
 - b. Ensure through evaluation that individuals performing OQ covered tasks on its Sandhill and Air Liquide pipelines are qualified under its OQP.
 - c. Collect and maintain, as required, records to demonstrate compliance with its OQP and to demonstrate compliance with Items 5a and 5b above.
 6. In regard to Item Number 7 of the Notice pertaining to Enmark's failure to adequately address the process for allowing a Contractor's individuals who are not qualified to perform an OQ covered task on the Sandhill and Air Liquide pipelines under the direction and observation of a qualified individual because Enmark's procedure stated a "*contractor must provide span of control acceptable to Enmark Energy while Covered Tasks are performed*" but Enmark's OQP did not indicate what was, or was not, an acceptable span of control; Enmark must specify in its OQP what is an acceptable span of control.
 7. Enmark must complete the above Items within the following time requirements.
 - a. Within 60 days of receipt of the Final Order Enmark must complete the requirements of Items 4 and 6 above and make available for PHMSA inspection all records and documentation showing the completion of Item 4.

- b. Within 90 days of receipt of the Final Order Enmark must provide written documentation confirming the completion of Items 4 and 6 above to the Director, Office of Pipeline Safety, PHMSA Southern Region.
 - c. Within 90 days of receipt of the Final Order Enmark must complete the requirements of Items 1, 2, 3, and 5 above.
 - d. Within 120 days of receipt of the Final Order Enmark must provide written notification to the Director, Office of Pipeline Safety, PHMSA Southern Region confirming the completion of Items 1, 2, 3, and 5 above and make available for PHMSA inspection all records and documentation showing the completion of Items, 1, 2, 3, and 5.
8. It is requested (not mandated) that Enmark Energy, Inc. maintain documentation of the safety improvement costs associated with fulfilling this Compliance Order and submit the total to Wayne T. Lemoi, 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.