



U.S. Department
of Transportation

**Pipeline and
Hazardous Materials Safety
Administration**

233 Peachtree Street Ste. 600
Atlanta, GA 30303

**NOTICE OF PROBABLE VIOLATION
PROPOSED CIVIL PENALTY
And
PROPOSED COMPLIANCE ORDER**

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

July 31, 2007

Mr. Rick J. Schach
Vice President Operations
Vectren Energy Delivery
1 N. Main Street
P.O. Box 209
Evansville, IN 47702-0209

CPF 2-2007-1014

Dear Mr.Schach:

On May 1-4 and May 15-18, 2006, representatives of the Pipeline and Hazardous Materials Safety Administration (PHMSA), Ohio PUC and Indiana URC, pursuant to Chapter 601 of 49 United States Code inspected your Gas Integrity Management Program in Evansville, Indiana.

As a result of the inspection, it appears that you have committed probable violations of the Pipeline Safety Regulations, Title 49, Code of Federal Regulations. The integrity management rules requires operators to develop integrity management programs for gas transmission pipelines located where a leak or rupture could do the most harm, i.e., could impact high consequence areas (HCAs). The rule requires gas transmission pipeline operators to perform ongoing assessments of pipeline integrity, to improve data collection, integration, and analysis, to repair and remediate the pipeline as necessary, and to implement preventive and mitigative actions. The items inspected and the probable violation(s) are:

1. Failure to Follow a Written Integrity Management Program

§ 192.907 What must an operator do to implement this subpart?

(a) **General.** No later than December 17, 2004, an operator of a covered pipeline segment must develop and follow a written integrity management program that contains all the elements described in § 192.911 and that addresses the risks on each covered transmission pipeline segment. The initial integrity management program must consist, at a minimum, of a framework that describes the process for implementing each program element, how relevant decisions will be made and by whom, a time line for completing the work to implement the program element, and how information gained from experience will be continuously incorporated into the program. The framework will evolve into a more detailed and comprehensive program. An operator must make continual improvements to the program.

(b) **Implementation Standards.** In carrying out this subpart, an operator must follow the requirements of this subpart and of ASME/ANSI B31.8S (ibr, see § 192.7) and its appendices, where specified. An operator may follow an equivalent standard or practice only when the operator demonstrates the alternative standard or practice provides an equivalent level of safety to the public and property. In the event of a conflict between this subpart and ASME/ANSI B31.8S, the requirements in this subpart control.

• Item 1: §192.907

Contrary to 192.907(a) and (b), ASME B31.8S, Vectren Energy Delivery (VED) had developed an Integrity Management Program (IMP) but did not follow VED IMP procedures. Examples of where VED did not follow its procedures are as follows:

- VED did not collect, integrate and analyze the data required by procedure IMP 4-001 Pipeline Integrity Data Management;
- VED did not identify and include consequence factors in its risk assessment process required by procedure IMP-6-003, and instead treated consequence uniformly;
- VED did not perform annual updates or incorporate changes to the Baseline Assessment Plan (BAP) as required by VED IMP procedure IMP-6-005, nor was the BAP maintained up-to-date;
- VED did not follow the requirements in the ECDA NACE RP 0502 standard nor follow the VED ECDA procedure IMP-6-014
Did not perform an acceptable ECDA feasibility study
Did not specify critical data collection and data integration requirements
Did not identify ECDA regions

Had not performed the post assessment step of the ECDA process;

- VED did not implement its process for data integration to identify third party damage threats;
- VED did not implement comprehensive additional preventive measures, and did not perform an analysis to determine if automatic shut-off valves or remote control valves are needed for any HCA segments as required by VED IMP procedure IMP-6-007; and
- VED did not perform annual audits of its IMP program and processes as required by VED IMP procedures IMP-10-002.

2. Identification of HCAs

§ 192.903 What definitions apply to this subpart?

***Potential impact radius (PIR)* means the radius of a circle within which the potential failure of a pipeline could have significant impact on people or property. PIR is determined by the formula $r = 0.69 * (\text{square root of } (p*d^2))$, where 'r' is the radius of a circular area in feet surrounding the point of failure, 'p' is the maximum allowable operating pressure (MAOP) in the pipeline segment in pounds per square inch and 'd' is the nominal diameter of the pipeline in inches.**

§192.911 What are the elements of an integrity management program?

(a) An identification of all high consequence areas, in accordance with §192.905.

- **Item 2A: §192.911 (a) –**

VED did not document if non-pipe facilities (e.g., regulator stations, compressor stations) had any additional impact to high consequence areas (HCA). VED did not identify which compressor stations, regulator stations and other facilities meet criteria to be treated as covered segments in HCA. Therefore, all covered HCA pipeline segments may not have been identified by December 17, 2004.

- **Item 2B: §192.903**

VED did not ensure accurate MAOPs were used to determine the potential impact radius (PIR). MAOPs are used to identify the extent of covered HCA pipeline segments whose integrity is to be assessed. The Subject Matter Expert (SME) Risk Ranking documents show several missing MAOP data points.

3. Identification of Threats, Data Integration, and Risk Assessment

§192.917 How does an operator identify potential threats to pipeline integrity and use the threat identification in its integrity program?

(a) Threat identification. An operator must identify and evaluate all potential threats to each covered pipeline segment. Potential threats that an operator must consider include, but are not limited to, the threats listed in ASME/ANSI B31.8S (ibr, see §192.7), section 2, which are grouped under the following four categories:

- (1) Time dependent threats such as internal corrosion, external corrosion, and stress corrosion cracking;**
- (2) Static or resident threats, such as fabrication or construction defects;**
- (3) Time independent threats such as third party damage and outside force damage; and**
- (4) Human error.**

(b) Data gathering and integration. To identify and evaluate the potential threats to a covered pipeline segment, an operator must gather and integrate existing data and information on the entire pipeline that could be relevant to the covered segment. In performing this data gathering and integration, an operator must follow the requirements in ASME/ANSI B31.8S, section 4. At a minimum, an operator must gather and evaluate the set of data specified in Appendix A to ASME/ANSI B31.8S, and consider both on the covered segment and similar non-covered segments, past incident history, corrosion control records, continuing surveillance records, patrolling records, maintenance history, internal inspection records and all other conditions specific to each pipeline.

(c) Risk assessment. An operator must conduct a risk assessment that follows ASME/ANSI B31.8S, section 5, and considers the identified threats for each covered segment. An operator must use the risk assessment to prioritize the covered segments for the baseline and continual reassessments (§ § 192.919, 192.921, 192.937), and to determine what additional preventive and mitigative measures are needed (§ 192.935) for the covered segment.

(e) Actions to address particular threats. If an operator identifies any of the following threats, the operator must take the following actions to address the threat.

(3) Manufacturing and construction defects. If an operator identifies the threat of manufacturing and construction defects (including seam defects) in the covered segment, an operator must analyze the covered segment to determine the risk of failure from these defects. The analysis must consider the results of prior assessments on the covered segment. An operator may consider manufacturing and construction related defects to be stable defects if the operating pressure on the covered segment has not increased over the maximum operating pressure experienced during the five years preceding identification of the high consequence area. If any of the following changes occur in the covered segment, an operator must prioritize the covered segment as a high risk segment for the baseline assessment or a subsequent reassessment.

- (i) Operating pressure increases above the maximum operating pressure experienced during the preceding five years;**
- (ii) MAOP increases; or**
- (iii) The stresses leading to cyclic fatigue increase.**

(4) ERW pipe. If a covered pipeline segment contains low frequency electric resistance welded pipe (ERW), lap welded pipe or other pipe that satisfies the conditions specified in ASME/ANSI B31.8S, Appendices A4.3 and A4.4, and any covered or non covered segment in the pipeline system with such pipe has experienced seam failure, or operating pressure on the covered segment has increased over the maximum operating pressure experienced during the preceding five years, an operator must select an assessment technology or technologies with a proven application capable of assessing seam integrity and seam corrosion anomalies. The operator must prioritize the covered segment as a high risk segment for the baseline assessment or a subsequent reassessment

• Item 3A: §192.917 (a)

VED did not evaluate all potential threats to its pipeline system and did not determine whether manufacturing and construction threats on its covered segments are unstable and in need of assessment. VED did not identify covered segments containing low frequency – electric resistance welded (LF-ERW) or lap-welded piping, manufacturing defects, and construction defects. Additionally, VED did not determine if operating pressures on covered segments increased over the maximum operating pressures during the preceding five years. VED did not identify assessment methods to be used to assess LF-ERW or lap welded piping, manufacturing defects, and construction defects.

- **Item 3B: §192.917 (b)**

VED did not gather and integrate existing data and information on its pipelines needed to implement its integrity management program as required by its procedure IMP – 4-001. As a result, VED compromised its data integration process which affects its threat and risk analyses and the accuracy of its priorities contained within its BAP. Deficiencies included:

1. VED did not have a comprehensive plan for collecting, reviewing and analyzing pipeline data, and did not provide a checklist of data sources to SMEs that could be used to ensure that all possible available pipeline data records were researched and data was retrieved as completely as possible;
2. VED did not have details on how it intends to continually upgrade the quality and quantity of data used in the risk analysis process, including but not limited to how data is received by the IM project, manipulated and validated, entered into the pipeline database, and factored into risk analysis updates; and
3. VED's data collection and integration plan did not describe how data is collected during bell hole openings that result from the assessment process or maintenance activities, how the data are received by the IM project, validated, integrated with other data, entered into the pipeline database, and factored into risk analysis updates.

- **Item 3C: §192.917 (b)**

VED had identified a substantial amount of data as unknown which could cause inappropriate risk assessments. For example, the VEDI-N line installed in 1987 had a large amount of unknowns for a relatively new pipeline. The substantial amount of missing or unknown data and unconfirmed conservatism of assumptions used to compensate for this missing/unknown data limits VED's ability to perform a valid and substantiated risk ranking of HCAs for use in generating a Baseline Assessment Plan.

- **Item 3D: §192.917 (b)**

It appeared that the inadequacies in VED's IM program found during the inspection could be traced in part to inadequate staffing of the IM project team during the developmental phases of the program in 2003, 2004 and 2005.

4. Baseline Assessment Plan

§192.919 What must be in the baseline assessment plan?

An operator must include each of the following elements in its written baseline assessment plan:

- (a) **Identification of the potential threats to each covered pipeline segment and the information supporting the threat identification. (See §192.917.);**

- (b) The methods selected to assess the integrity of the line pipe, including an explanation of why the assessment method was selected to address the identified threats to each covered segment. The integrity assessment method an operator uses must be based on the threats identified to the covered segment. (See §192.917.) More than one method may be required to address all the threats to the covered pipeline segment;**
- (c) A schedule for completing the integrity assessment of all covered segments, including, risk factors considered in establishing the assessment schedule;**
- (d) If applicable, a direct assessment plan that meets the requirements of §§192.923, and depending on the threat to be addressed, of §192.925, §192.927, or §192.929;**

- **Item 4A: §192.919 (a), (b), (c) & (d)**

VED did not generate a valid risk-ranked BAP by the required date of December 17, 2004, nor was a valid risk-ranked BAP used in scheduling pipeline assessments. All identified HCA's were not included in the original BAP; VED treated consequence uniformly, and thereby did not consider applicable risk factors in the prioritization of the schedule. VED determined its risk-ranked BAP to be invalid in late 2005, did not include all segments, and was still working on developing a comprehensive risk based BAP.

- **Item 4B: §192.919 (a), (b), & (c)**

VED did not ensure that appropriate assessments were performed to address all potential threats to the pipeline integrity, and if necessary, perform additional assessments when required. VED conducted assessments using only ECDA, which only assesses for the threat of external corrosion. No other threats were assessed. In addition, VED's BAP indicated that the ECDA assessments were complete, even though the four-step ECDA process had not been completed.

5. Additional Preventive and Mitigative Measures

§192.935 What additional preventive and mitigative (P&M) measures must an operator take?

(a) General requirements. An operator must take additional measures beyond those already required by Part 192 to prevent a pipeline failure and to mitigate the consequences of a pipeline failure in a high consequence area. An operator must base the additional measures on the threats the operator has identified to each pipeline segment. (See § 192.917) An operator must conduct, in accordance with one of the risk assessment approaches in ASME/ANSI B31.8S (ibr, see § 192.7), section 5, a risk analysis of its pipeline to identify additional measures to protect the high consequence area and enhance public safety. Such additional measures include, but are not limited to, installing Automatic Shut-off Valves or Remote Control Valves, installing computerized monitoring and leak detection systems, replacing pipe segments with pipe of heavier wall thickness, providing additional training to personnel on response procedures, conducting drills with local emergency responders and implementing additional inspection and maintenance programs.

• Item 5A: §192.935 (a)

VED’s IMP procedure IMP-6-007 identifies possible P&M measures, but no specific evaluation has been performed and documented to identify which measures are appropriate for specific covered HCA segments. Additionally, VED has not implemented a data integration process to identify third party damage threats and implement appropriate P&M measures.

Proposed Civil Penalty

Under 49 United States Code, § 60122, you are subject to a civil penalty not to exceed \$100,000 for each violation for each day the violation persists up to a maximum of \$1,000,000 for any related series of violations. The Compliance Officer has reviewed the circumstances and supporting documentation involved in the above probable violation(s) and has recommended that you be preliminarily assessed a civil penalty of \$51,000 as follows:

<u>Item number</u>	<u>PENALTY</u>
1	\$20,000
4A	\$31,000
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Total	\$51,000

Warning Items

With respect to item(s) 2A, 3A, 3D, and 4B, we have reviewed the circumstances and supporting documents involved in this case and have decided not to conduct additional enforcement action or penalty assessment proceedings at this time. We advise you to promptly correct these items. Be advised that failure to do so may result in VED being subject to additional enforcement action.

Proposed Compliance Order

With respect to items: 1, 2B, 3B, 3C, 4A, and 5A, pursuant to 49 United States Code § 60118, the Pipeline and Hazardous Materials Safety Administration proposes to issue a Compliance Order to VED. Please refer to the *Proposed Compliance Order*, which is enclosed and made a part of this Notice.

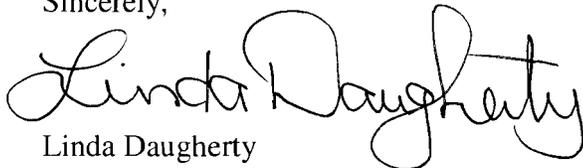
Response to this Notice

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. 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). 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 2-2007-1014** and for each document you submit, please provide a copy in electronic format whenever possible.

Please submit all written correspondence to the PHMSA Southern Region Office.

Sincerely,



Linda Daugherty
Director, Southern Region
Pipeline and Hazardous Materials Safety Administration

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 VED a Compliance Order incorporating the following remedial requirements to ensure the compliance of VED with the pipeline safety regulations:

1. In regard to Item Number 1 of the Notice pertaining to developing and following a written integrity management program and detailed procedures:

VED must develop further specific details of the actions and activities to be accomplished throughout its IM Plan and IMP procedures and implement the requirements in its procedures including the following to:

- Collect, integrate and analyze the data required to implement an integrity management program, IMP 4-001, Section 6 of the IM Plan,
- Identify and include consequence factors in its risk assessment process, IMP 6-003,
- Perform annual updates and incorporate changes to its Baseline Assessment Plan (BAP) and maintain the BAP up-to-date, IMP 6-005,
- Follow the requirements in the ECDA NACE RP 0502-2002 standard and IMP 6-014 including:
 - Performing an acceptable ECDA feasibility study,
 - Specifying critical data collection and data integration requirements,
 - Identifying ECDA regions,
 - Performing the post assessment step of the ECDA process,
- Develop and improve its integration of data arising from all sources, including assessments, encroachments or foreign line crossings and implement its process for data integration to identify third party damage threats,
- Implement comprehensive additional preventive measures, perform an analysis to determine if automatic shut-off valves or remote control valves are needed for any HCA segments, IMP 6-007,
- Perform annual audits of its IMP program and processes, IMP 10-001, IMP 10-002.

VED must evaluate the need to re-perform its previously conducted indirect examinations and provide a plan of action or justification if evaluation determines performing its indirect examinations again is not required.

2. In regard to Item Number 2B of the Notice pertaining to the use of valid Maximum Allowable Operating Pressures (MAOPs) in determining potential impact radii and identifying identified sites and HCAs:

VED must confirm valid MAOPs and ensure all MAOPs are accurate for all HCA pipeline segments.

VED must ensure accurate MAOPs are used to determine the potential impact radius (PIR) and verify the accuracy of its list of covered HCA pipeline segments whose integrity is to be assessed.

3. In regard to Item Number 3B of the Notice pertaining to identification, gathering and integration of data:

VED must gather and integrate its existing data and information on its pipelines needed to implement its integrity management program.

VED must develop and implement a process for integration of information on encroachments and foreign line crossings for evaluating the threat of third party damage.

VED must implement a comprehensive data integration process for collecting, reviewing and analyzing pipeline data to ensure accurate:

- Threat assessment,
- Risk analyses, and
- Assessment priorities contained within its BAP.

VED must ensure it continually upgrades the quality and quantity of data entered into the pipeline database and used in the risk analysis process,

VED must describe how its data collection and integration plan collects data during bell hole openings, are received by the IM project, validated, integrated with other data, entered into the pipeline database, and factored into risk analysis updates.

4. In regard to Item Number 3C of the Notice pertaining to the substantial amount of data identified as missing or unknown:

VED must obtain missing or unknown data and confirm or validate assumed or unverified data to ensure valid risk assessments.

VED must identify all unknown data and provide a plan of action to reduce unknowns.

VED must identify and implement a viable data integration process which supports its:

- Risk analysis process,
- The BAP, and

- The preventive and mitigative measures evaluation plan.
5. In regard to Item Number 4A of the Notice pertaining to generating a valid risk-ranked BAP to use in scheduling pipeline assessments:

VED must ensure it implements a valid and comprehensive threat evaluation and a current risk analysis,

VED must develop a comprehensive valid risk-ranked BAP to schedule and accomplish its pipeline assessments,

VED must ensure:

- All identified HCA's are included in the BAP,
- Consequences are defined and applied,
- ECDA assessments are completed and properly accounted for, and
- Assessments are properly managed and tracked in the BAP.

6. In regard to Item Number 5A of the Notice pertaining to developing and implementing a valid Preventive and Mitigative (P&M) Measures plan, although VED had implemented many P&M measures, none resulted from a risk analysis for specific HCA segments. Accordingly:

VED must develop and implement a risk based P&M measures plan to identify additional P&M measures to reduce the risk on specific HCA covered segments;

VED must implement a data integration process to identify third party damage threats and implement appropriate P&M measures for its affected HCAs; and

VED must perform a risk based evaluation for each HCA segment to determine if automatic shut-off valves or remote control valves are needed.

7. VED must complete the above actions within 90 days of receipt of this Final Order.
8. VED shall maintain documentation of the safety improvement costs associated with fulfilling this Compliance Order and submit the total to Linda Daugherty, Director, Southern Region, Pipeline and Hazardous Materials Safety Administration. Costs shall 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.