

NOTICE OF AMENDMENT

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

April 22, 2009

Mr. Royce Ramsay
Vice President, Operations
Northern Natural Gas Company
1111 South 103rd Street
Omaha, Nebraska 68124-1000

CPF 3-2009-1005M

Dear Mr. Ramsay:

On June 5-9, 2006 and June 19-21, 2006, representatives of the Pipeline and Hazardous Materials Safety Administration (PHMSA), Minnesota Office of Pipeline Safety and Michigan Public Service Commission pursuant to Chapter 601 of 49 United States Code inspected the Northern Natural Gas (NNG) integrity management (IM) plan and procedures in Omaha, Nebraska.

On the basis of the inspection, PHMSA has identified apparent inadequacies within NNG's plans or procedures, as described below:

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

An operator's initial integrity management program begins with a framework (see §192.907) and evolves into a more detailed and comprehensive integrity management program, as information is gained and incorporated into the program. An operator must make continual improvements to its program. The initial program framework and subsequent program must, at minimum, contain the following elements. (When indicated, refer to ASME/ANSI B31.8S (ibr, see §192.7) for more detailed information on the listed element.)

1. **§192.911(b) A baseline assessment plan meeting the requirements of §192.919 and §192.921.**

Item 1A: § 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.).

§192.917(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. . . .

§192.917(e)(3) Manufacturing and construction defects.

§192.917(e)(4) ERW pipe.

§ 192.921 How is the baseline assessment to be conducted?

(a) Assessment methods. An operator must assess the integrity of the line pipe in each covered segment by applying one or more of the following methods depending on the threats to which the covered segment is susceptible. An operator must select the method or methods best suited to address the threats identified to the covered segment (See §192.917).

(1) Internal inspection tool or tools capable of detecting corrosion, and any other threats to which the covered segment is susceptible. An operator must follow ASME/ANSI B31.8S (incorporated by reference, see §192.7), section 6.2 in selecting the appropriate internal inspection tools for the covered segment.

Criteria used to select the appropriate assessment method(s), as specified in ASME/ANSI B31.8S, section 6, were not adequately defined in the NNG integrity management program (IMP), as it stated magnetic flux leakage tools would be used to assess threats due to stress corrosion cracking (SCC) and seam defects.

2. **§192.911(c) An identification of threats to each covered pipeline segment, which must include data integration and a risk assessment. An operator must use the threat identification and risk assessment to prioritize covered segments for assessment (§192.917) and to evaluate the merits of additional preventive and mitigative measures (§192.935) for each covered segment.**

§192.917(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.....

§192.917(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.

ASME/ANSI B31.8S, section 4.4 - Data Collection, Review, and Analysis. A plan for collecting, reviewing, and analyzing the data shall be created and in place from the conception of the data collection effort. These processes are needed to verify the quality and consistency of the data. Records shall be maintained throughout the process that identify where and how unsubstantiated data is used in the risk assessment process, so its potential impact on the variability and accuracy of assessment results can be considered. This is often referred to as *metadata* or information about the data.

§192.917(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.

§192.917(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. .

.....

(5) **Corrosion.** If an operator identifies corrosion on a covered pipeline segment that could adversely affect the integrity of the line (conditions specified in §192.933), the operator must evaluate and remediate, as necessary, all pipeline segments (both covered and non-covered) with similar material coating and environmental characteristics. An operator must establish a schedule for evaluating and remediating, as necessary, the similar segments that is consistent with the operator's established operating and maintenance procedures under part 192 for testing and repair.

- **Item 2A: §192.917(a)**

All threats required to be evaluated by the rule and standard were not adequately considered and/or evaluated under NNG's procedures. Specifically, the following threats were not adequately evaluated by NNG for each covered segment per the requirements in the IM Rule and ASME B31.8S-2001 as part of the threat evaluation, risk analysis, and baseline assessment plan development:

1. High ph SCC (in response to this observation NNG performed a preliminary review of covered segments for susceptibility to high ph SCC and determined that none were susceptible.)
2. Low frequency electric resistance welded pipe or lap welded pipe that satisfy the conditions specified in ASME B31.8S-2001, Appendix A.4.3 and A.4.4.
3. Near-neutral SCC.

In addition, NNG procedures do not adequately define the process for evaluating interactive threats from different threat categories. NNG has specified several examples of interactive threats in its procedures but has yet to develop specific processes for evaluating these threats. Analysis of the interactive nature of threats (i.e., more than one threat occurring on a section of pipeline at the same time) is a mandatory requirement spelled out in ASME B31.8S-2001, Section 2.2. For example, threats due to pipe manufacturing and construction defects may often be treated as "stable" for which no integrity assessment is needed. However, other interacting threats could result in these otherwise stable defects becoming an integrity threat that must be assessed. In response to this observation, NNG developed and presented to the PHMSA team a comprehensive plan that included rules for evaluating interactive threats and new IMP revisions. After a preliminary review of this plan, the PHMSA team believes that this plan will adequately address this observation, provided the plan is fully implemented as described.

- **Item 2B: §192.917(b)**

NNG's procedures do not adequately define how data elements are brought together and analyzed. ASME B31.8S-2001, Section 4.4, requires that a plan be developed for collecting, reviewing, and analyzing data. Data gathering and integration is more than collecting data for input into a risk assessment model. Data integration requires that knowledgeable personnel use the information to make decisions/conclusions considering the relevant data. NNG's procedures 1000.201, Data Gathering, Review, and Integration, and 1000.301, Risk Assessment and Prioritization of Covered Segments, are geared towards the collection of data for input into the risk model and the analysis of the results, and not towards the evaluation of data sets such that potential pipeline integrity issues are identified. In response to this observation, NNG developed and presented to the PHMSA team a revised IM process for analyzing data. After a preliminary review of these changes, the PHMSA team believes that the program changes will adequately address this observation, provided they are fully implemented as described.

NNG's risk assessment processes do not include all of the data elements for threat identification and risk assessment according to the requirements in ASME B31.8S-2001, Sections 4.2, 4.3, 4.4. At a minimum, an operator must gather and evaluate the set of data specified in ASME B31.8S-2001, Appendix A (summarized in ASME B31.8S-2001, Table 1). While not all of the data may be relevant to NNG's system, NNG did not document justification for not using certain elements within these data sets. In response to this observation, NNG stated they would develop a plan to evaluate and include appropriate missing data elements specified in ASME B31.8S-2001, Appendix A and Table 1, by October 1, 2006.

Inaccuracies were identified during the team's review of data elements contained within the risk analysis database. It appears that an adequate quality control process was not implemented to ensure the data was accurate. In response to this observation, NNG developed IM process revisions to improve the IMP data quality. After a preliminary review of these changes, the PHMSA team believes the changes will adequately address this observation, provided they are fully implemented as described.

NNG has not developed and implemented a program to prioritize and collect missing data in situations where unknown variables drive the risk score. A number of data fields within the risk database are not populated. Because key data on segment threats have not been incorporated in the risk assessment, “null” values appear to dominate much of the scoring of the IMP probability indexes. In response to this observation, NNG stated they would develop a plan to collect the missing data specified in ASME B31.8S-2001, Appendix A and Table 1, by October 1, 2006, and incorporate, as appropriate, the missing data into the risk analysis database.

- **Item 2C: §192.917(c)**

The treatment of incident/leak data in the risk analysis process is not appropriate for assessing risk on covered segments. Incident/leak data are applied only in the risk scoring of the segment containing the precise location of the leak or incident. The potential applicability of the leak/incident to other segments with similar characteristics is not considered. This affects scoring of both the probability and consequence indexes. 192.917(b) requires the use of data from the entire pipeline (covered and non-covered segments) that is applicable to each covered segment. In response to this observation, NNG stated they would conduct a review of historical leak and incident data and develop a set of susceptibility rules to give additional consideration to covered segments with “like pipe” in the risk analysis results. After a preliminary review of this action plan, the PHMSA team believes this approach will adequately address this observation, if properly developed and implemented.

- **Item 2D: §192.917(e)(5)**

The IMP did not require NNG to evaluate corrosion for all pipeline segments (both covered and non-covered) with similar coating materials and environmental characteristics when significant corrosion is identified. The PHMSA team notes that at the time of the inspection, no immediate repair corrosion anomalies had been identified by NNG.

3. §192.911(h) Provisions meeting the requirements of §192.935 for adding preventive and mitigative measures to protect the high consequence area.

Item 3A: §192.935(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.....

NNG’s process/procedures to identify and implement additional measures to prevent and mitigate a pipeline failure due to outside force damage were inadequate. Although the prevention and remediation options table in 1000.501.01 included threat prevention methods for outside force damage, the program document, 1000.501, did not discuss how this threat would be evaluated for preventive and mitigative efforts, such as possible data

sources and evaluation guidelines. The PHMSA team notes that even though the IM procedure did not contain detailed guidance in this area, NNG has collected data from various sources regarding possible outside force threats to its pipeline and intends to evaluate this information for possible preventive and mitigative measures.

4. §192.911(k) A management of change process as outlined in ASME/ANSI B31.8S, section 11.

Item 4A: ASME/ANSI B31.8S Section 11(d) - Management of change ensures that the integrity management process remains viable and effective as changes to the system occur and/or new, revised, or corrected data becomes available. Any change to equipment or procedures has the potential to affect pipeline integrity. Most changes, however small, will have a consequent effect on another aspect of the system. For example, many equipment changes will require a corresponding technical or procedural change. All changes shall be identified and reviewed before implementation. Management of change procedures provides a means of maintaining order during periods of change in the system and helps to preserve confidence in the integrity of the pipeline.

NNG's management of change (MOC) process did not require that changes to the pipeline systems be considered for potential impacts to the IMP, per the requirements of ASME B31.8S-2001, section 11. While it is acceptable to manage system changes through processes outside of the IMP, NNG needs to ensure that system changes are identified and reviewed for potential impacts to the IMP before implementation.

Response to this Notice

This Notice is provided pursuant to 49 U.S.C. § 60108(a) and 49 C.F.R. § 190.237. 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.

If, after opportunity for a hearing, your plans or procedures are found inadequate as alleged in this Notice, you may be ordered to amend your plans or procedures to correct the inadequacies (49 C.F.R. § 190.237). If you are not contesting this Notice, we propose that you submit your amended procedures to my office within 30 days of receipt of this Notice. This period may be extended by written request for good cause. Once the inadequacies identified herein have been addressed in your amended procedures, this enforcement action will be closed.

In correspondence concerning this matter, please refer to **CPF 3-2009-1005M** and, for each document you submit, please provide a copy in electronic format whenever possible.

Sincerely,

Ivan A. Huntoon
Director, Central Region
Pipeline and Hazardous Materials Safety Administration

Enclosure: *Response Options for Pipeline Operators in Compliance Proceedings*