

**NOTICE of PROBABLE VIOLATION  
WARNING LETTER  
NOTICE of AMENDMENT  
and  
LETTER of CONCERN**

**CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

December 21, 2004

Mr. Dan C. Tutcher  
President  
Enbridge Energy Company, Inc.  
1100 Louisiana  
Suite 2950  
Houston, TX 77002-7002

CPF No. 3-2004-5038

Dear Mr. Tutcher:

During the weeks of May 12, 2003, and June 2, 2003, representatives of the Office of Pipeline Safety (OPS) , pursuant to Chapter 601 of 49 United States Code, conducted an inspection of Enbridge Pipelines, LLC's (Enbridge) HCA Management Plan at its facility in Superior, Wisconsin.

As a result of the inspection, it appears that you have committed probable violations, as noted below, of pipeline safety regulations, Title 49, Code of Federal Regulations, Part 195.

**1. §195.452 Pipeline integrity management in high consequence areas.**

**(b) What program and practices must operators use to manage pipeline integrity?**

**Each operator of a pipeline covered by this section must:**

**(2) Include in the program an identification of each pipeline or pipeline segment in the first column of the following table not later than the date in the second column:**

| Pipeline        | Date                                |
|-----------------|-------------------------------------|
| Category 1..... | December 31, 2001.                  |
| Category 2..... | November 18, 2002.                  |
| Category 3..... | Date the pipeline begins operation. |

At the time of inspection, Enbridge had constructed and placed into service 36" diameter pipe in parallel with existing Enbridge pipelines as part of the Terrace III project. These newly constructed 36" pipeline segments are Category 3 pipe per §195.452 (a)(3), since they were constructed after May 29, 2001. For this new 36" pipe, Enbridge failed to identify pipeline segments which could affect high consequence areas (HCA) prior to the start of pipeline operation. The existing pipelines had HCAs identified, and subsequent to the OPS inspection Enbridge completed segment identification for the new 36" pipe placed in service as part of the Terrace III project.

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

**(b) What program and practices must operators use to manage pipeline integrity? Each operator of a pipeline covered by this section must:**

**(3) Include in the program a plan to carry out baseline assessments of line pipe as required by paragraph (c) of this section.**

**(c) What must be in the baseline assessment plan?**

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

**(i) The methods selected to assess the integrity of the line pipe. An operator must assess the integrity of the line pipe by any of the following methods. The methods an operator selects to assess low frequency electric resistance welded pipe or lap welded pipe susceptible to longitudinal seam failure must be capable of assessing seam integrity and of detecting corrosion and deformation anomalies.**

Enbridge's HCA Management Plan prioritized pipelines for completion of a crack susceptibility study. Based on various factors, including failure history, longitudinal seam type, previous inspection results, etc., susceptibility was established and assessment methods included in the baseline assessment plan (BAP) for higher priority pipelines. However, for lower priority pipelines the crack susceptibility study was not completed and assessment methods relating to crack-like anomalies (e.g. railroad fatigue cracks, flash weld seam anomalies, stress corrosion cracking, etc.) was not established. Although the likelihood of failure due to cracking for lower priority pipeline segments may be less than the higher priority pipeline segments, the determination of all necessary assessment methods should have been completed and included in the BAP for all pipeline segments by March 31, 2002 per §195.452(b)(1) for Category 1 pipelines.

**3. §195.452 Pipeline integrity management in high consequence areas.**

**(h) What actions must an operator take to address integrity issues?**

**(2) Discovery of condition. Discovery of a condition occurs when an operator has adequate information about the condition to determine that the condition presents a potential threat to the integrity of the pipeline. An operator must promptly, but no later than 180 days after an integrity assessment, obtain sufficient information about a condition to make that determination, unless the operator can demonstrate that the 180-day period is impracticable.**

For the Line 4 - Plummer to Clearbrook pipeline section discovery was not made within 180 days of the assessment for certain anomalies. The in-line inspection was completed on May 30, 2002, and the final tool vendor report was received on November 1, 2002. Several anomalies that were identified in the vendor's report were excluded from the remediation plan on the basis that these anomalies had been previously repaired. Upon further review Enbridge determined that these anomalies had actually not been previously remediated and the date of discovery was revised to be May 2003. These anomalies were categorized as 180 day repairs per §195.452(h)(4)(iii) and were scheduled for remediation.

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 violations persists up to a maximum of \$1,000,000 for any related series of violations.

In regard to Items 1, 2, and 3, we have reviewed the circumstances and supporting documents involved in this case, and have decided not to assess you a civil penalty. We advise you, however, that should you not correct the circumstances leading to the violations, we will take enforcement action when and if the continued violations come to our attention.

Additionally, the inspection found that Enbridge had developed and implemented an integrity management program for pipeline segments that could affect high consequence areas (HCA) pursuant to §195.452. However, it appears that Enbridge's written integrity management program must be amended to address the following items required by §195.452.

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

**(f) What are the elements of an integrity management program? An operator must include, at minimum, each of the following elements in its written integrity management program:**

**(1) A process for identifying which pipeline segments could affect a high consequence area;**

The segment identification process is manually performed by an analyst using USGS maps. As such, the process should be sufficiently detailed and documented to direct the analyst to properly perform segment identification with consistent results. Specifically, the water transport of spilled oil was considered to end where a control point (location

where spill containment measures are deployed) exists with a minimum of 3 hours flow time. The control points were determined by the analyst, but were not present on the documented maps. In the case of overland flow, the distance traveled was dependent on the slope of the terrain, but a composite buffer zone showing the ultimate distance reached was not presented graphically on the HCA identification maps.

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

**f) What are the elements of an integrity management program? An operator must include, at minimum, each of the following elements in its written integrity management program:**

**2) A baseline assessment plan meeting the requirements of paragraph (c) of this section;**

**(c) What must be in the baseline assessment plan?**

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

**(iii) An explanation of the assessment methods selected and evaluation of risk factors considered in establishing the assessment schedule.**

**(e) What are the risk factors for establishing an assessment schedule (for both the baseline and continual integrity assessments)?**

**(1) An operator must establish an integrity assessment schedule that prioritizes pipeline segments for assessment (see paragraphs (d)(1) and (j)(3) of this section). An operator must base the assessment schedule on all risk factors that reflect the risk conditions on the pipeline segment. The factors an operator must consider include, but are not limited to:**

**(vi) Existing or projected activities in the area;**

The process of prioritization of pipeline assessments in the Baseline Assessment Plan did not include explicit documentation on how existing or projected activities are considered when developing the assessment schedule.

**6. §195.452 Pipeline integrity management in high consequence areas.**

**f) What are the elements of an integrity management program? An operator must include, at minimum, each of the following elements in its written integrity management program:**

**(2) A baseline assessment plan meeting the requirements of paragraph (c) of this section;**

**(d) When must operators complete baseline assessments? Operators must complete baseline assessments as follows:**

**(3) Newly-identified areas.**

**(i) When information is available from the information analysis (see**

paragraph (g) of this section), or from Census Bureau maps, that the population density around a pipeline segment has changed so as to fall within the definition in §195.450 of a high population area or other populated area, the operator must incorporate the area into its baseline assessment plan as a high consequence area within one year from the date the area is identified. An operator must complete the baseline assessment of any line pipe that could affect the newly-identified high consequence area within five years from the date the area is identified.

(ii) An operator must incorporate a new unusually sensitive area into its baseline assessment plan within one year from the date the area is identified. An operator must complete the baseline assessment of any line pipe that could affect the newly-identified high consequence area within five years from the date the area is identified.

Enbridge's HCA Management Plan did not include the requirements for incorporating newly identified segments affecting high consequence areas into its baseline assessment plan within one year of identification, and performing a baseline assessment within 5 years of identification.

#### **7. §195.452 Pipeline integrity management in high consequence areas.**

**f) What are the elements of an integrity management program? An operator must include, at minimum, each of the following elements in its written integrity management program:**

**(4) Criteria for remedial actions to address integrity issues raised by the assessment methods and information analysis (see paragraph (h) of this section);**

**(h) What actions must an operator take to address integrity issues?**

**(4) Special requirements for scheduling remediation.**

**(i) Immediate repair conditions. An operator's evaluation and remediation schedule must provide for immediate repair conditions. To maintain safety, an operator must temporarily reduce operating pressure or shut down the pipeline until the operator completes the repair of these conditions. An operator must calculate the temporary reduction in operating pressure using the formula in section 451.7 of ASME/ANSI B31.4 (incorporated by reference, see Sec. 195.3).**

Enbridge's HCA Management Plan references the use of RSTRENG to calculate the temporary reduction in operating pressure for immediate repair conditions, rather than section 451.7 of ASME B31.4. The time frame to complete an engineering evaluation to determine the pressure reduction for other immediate repair conditions (e.g. topside dents with indication of metal loss, cracks, or stress riser, and topside dents greater than 6% deep) was not specified. Actions to be taken, such as pressure reduction or shutdown of the affected segment, while an engineering evaluation is completed was not defined in the HCA Management Plan.

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

**f) What are the elements of an integrity management program? An operator must include, at minimum, each of the following elements in its written integrity management program:**

**(3) An analysis that integrates all available information about the integrity of the entire pipeline and the consequences of a failure (see paragraph (g) of this section);**

**(g) What is an information analysis? In periodically evaluating the integrity of each pipeline segment (paragraph (j) of this section), an operator must analyze all available information about the integrity of the entire pipeline and the consequences of a failure. This information includes:**

**(3) Data gathered in conjunction with other inspections, tests, surveillance and patrols required by this Part, including, corrosion control monitoring and cathodic protection surveys;**

Enbridge's information analysis procedures did not adequately consider data gathered from other inspections and tests, including cathodic protection surveys. Additionally, the HCA Management Plan did not include a process to communicate assessment and repair results to corrosion control personnel for consideration of additional actions to further mitigate internal and external corrosion. Also, the process of evaluation of each pipeline segment by analyzing all available data was insufficient to gain a complete understanding of pipeline integrity.

In regard to Items 4 through 8, when it is found that an operator's plans and/or procedures are inadequate, the operator, after notice and opportunity for hearing as provided in 49 C.F.R. §190.237, may be required to amend its plans and procedures. This letter serves as your notification of inadequate plans and procedures as well as your response options as prescribed under §190.237. The operator is allowed thirty (30) days after receipt of such notice to submit written comments or request an informal hearing. After considering the material presented, OPS is required to notify the operator of the required amendment or withdraw the notice proposing the amendment. If you do not desire to contest the notice, within thirty (30) days of receipt of this notice you must prepare the revised procedures and provide a copy to:

Director, Central Region  
Office of Pipeline Safety  
901 Locust St, Room 462  
Kansas City, MO 64106

In addition to the items noted above, the inspection revealed areas of concern that we would like to bring to your attention.

- Enbridge utilized regression analysis to predict overland spread versus release volume for various topographical slopes. Not all release data, including the spill at Cohasset, MN, was used to verify that volume release and overland spreads predicted by the segment identification process were appropriate. Additionally, the time for containment of the spilled product was assumed to be 3 hours. Validation of this assumption through

- comparison of actual response times during spills should be conducted.
- Discrepancies were noted between the segments identified as “could affect” on the HCA maps and Table 2 of the HCA Management Plan.
- Enbridge did not account for multiple instances (overlap) of common types of HCAs when segment identification results were input into the consequence (risk) analysis. For example, when multiple drinking water HCAs are affected, this may be of greater consequence than if one drinking water HCA is affected in the event of a spill.
- The inspection team noted instances where the data entered into the risk model was not updated and/or entered prior to using risk results for prioritization of the assessment schedule. Additionally, it appeared to the inspection team that the “impact on business” was a significant factor of the risk ranking of some segments, and that this factor may need to be re-visited to determine if the weighting is appropriate.
- Flanges and fittings were the primary sources of leaks at facilities; however, this was not well-considered in the evaluation of risks at facilities.
- There were instances of discovery not being made within 180 days of assessment due to delayed reporting by the in-line inspection vendor.

We appreciate your attention to these matters.

Please refer to CPF 3-2004-5038 in all correspondence related to this matter.

Sincerely,

Ivan A. Huntoon  
Director, Central Region