National Energy Board

Office national de l'énergie

File OF-Surv-Gen-T217 01
3 March 2017

Mr. John Ferris
President and CEO
Trans-Northern Pipelines Inc.
45 Vogell Road, Suite 310
Richmond Hill, ON L4B 3P6
Facsimile 905-770-8675

Dear Mr. Ferris:

Trans-Northern Pipelines Inc. (TNPI)
Amending Safety Order AO-002-SO-T217-03-2010
Conditions 5.a and 5.c Report Filing

On 24 October 2016, the National Energy Board (Board) issued Amending Safety Order AO-002-SO-T217-03-2010 (Amending Safety Order) to TNPI allowing operation of its pipeline system subject to certain conditions.

Condition 5.c of the Amending Safety Order requires TNPI to "file with the Board for approval by 31 December 2016, a report which describes the process of incident investigation and analysis including the incidents assessed, the analytical results, and the implemented and required preventive and mitigative measures. The report shall include a timeline to implement the preventive and mitigative measures that are not implemented when the report is filed (outstanding measures)".

On 30 December 2016, TNPI filed (1) a DNV GL report entitled Review of Overpressure Incidents – Condition 5.a (DNV GL Report), and (2) TNPI Condition 5.c Report – Prevention Measures and Timelines (Condition 5.c Report), in compliance with the Amending Safety Order.

The Board has reviewed the reports and requests additional information as set out in the attached Information Request. Please file a revised DNV GL Report and Condition 5.c Report, including your written responses, no later than 31 March 2017.

Yours truly,

Original signed by

Sheri Young
Secretary of the Board

Attachment

Trans-Northern Pipelines Inc. (TNPI)
Amending Safety Order AO-002-SO-T217-03-2010
Conditions 5.a and 5.c Report Filing[1]
File OF-Surv-Gen-T217 01
Filed 30 December 2016

Information Request No. 1

1.1 **TNPI Prevention Measures and Timelines (Pages 1 to 7)**

Reference:
i) Amending Safety Order AO-002-SO-T217-03-2010
ii) TNPI Condition 5.c Report - Prevention Measures and Timelines dated 29 December 2016
iii) DNV GL Report – Review of Overpressure Incidents – Condition 5.a dated 21 December 2016

Preamble: Reference iii) Section 4 provides individual incident analysis. As a result of the analysis, DNV GL recommended corrective and prevention measures based on the nature of the management system deficiency. The following are DNV GL's recommendations for management system deficiencies:

- Review the adequacy of the Management of Change (MOC) process (Reference iii), page 13, Incident 2016-008, Process 10 - Asset Management;
- Review and improve the procedure for high pressure shutdown to clearly define roles and responsibilities (Reference iii), page 9, Incident 2013-202, Process 9 – Risk Control;
- Review procedural controls for proper bypass of stations during maintenance work (Reference iii), page 11, Incident 2015-002, Process 9 – Risk Control;
- Implement appropriate procedural controls so that accurate information is provided regarding status of valves controlled by third party (Reference iii), page 6, Incident 2010-009, Process 9 – Risk Control;
- Review and improve the process for communicating and implementing learnings from previous incidents (Reference iii), page 8, Incident 2012-054, Process 13 – Learning from events.

On page 14 of Reference iii), DNV GL states that “while Asset Management was identified in four of the 13 incidents”, its “assessment is that appropriate actions were already taken to address the specific concerns identified”.

[1] NEB internal document #990559

The Board requires clarification regarding DNV GL's statement, specifically in relationship with the findings related to the MOC process (item 1, above), considering that these were not included in TNPI's Tables 1 to 3 of prevention measures on pages 1 to 7 of Reference ii).

In addition, because the other recommendations listed above are not clearly identifiable in TNPI's Tables 1 to 3 of prevention measures on pages 1 to 7 of Reference ii), further clarification for identification of DNV GL recommendations in Tables 1 to 3 is required.

Request:

a) Clarify DNV GL's statement regarding the Asset Management process with specific reference to recommendations related to the MOC process (on page 14 of Reference iii)), and identify the actions already taken by TNPI in Reference ii).

b) Identify the above-mentioned DNV GL recommendations in Tables 1 to 3 (e.g., pages 1 to 7) of Reference ii).

c) If the recommendations are not included in the Reference ii) Tables 1 to 3, incorporate them into Tables 1 to 3.

d) Provide information on how TNPI will meet DNV GL's above-noted recommendations including the implementation timelines.

1.2 Incident 2014-080 Oakville Delivery, Incident 2015-034 Farran's Point, and Incident 2016-008 Oakville Station

Reference:

i) Amending Safety Order AO-002-SO-T217-03-2010
ii) TNPI Condition 5.c Report - Prevention Measures and Timelines dated 29 December 2016
iii) DNV GL Report – Review of Overpressure Incidents – Condition 5.a dated 21 December 2016

Preamble:

Condition 4.a.iii. in Reference i) states the recommended measures shall include the installation of pressure relieving systems to ensure that overpressure will not occur at any point in the TNPI system.

Reference iii) Sections 4.2.9., 4.2.12., and 4.2.13 provide the review of incidents 2014-080, 2015-034, and 2016-008, including the risk control recommendations for implementation of "engineering or procedural controls or both, as required, to mitigate the risk of overpressure events" (e.g., pages 10 and 12 of Reference iii), and "to protect the TNPI pipeline system from overpressure conditions" (e.g., page 13 of Reference iii).

Page 14 of Reference iii) includes the management system elements identified as the most prevalent factors that contributed to the incidents. With respect to the *Risk Evaluation and Risk Control* management system element, DNV GL recommends that TNPI "apply appropriate engineering controls (including pressure relief) and procedural controls to mitigate the risk of overpressure events".

TNPI's preventive measures listed in Table 1 (e.g., page 1 to 4 of 7 of Reference ii) do not include any reference to pressure relief systems applied as engineering controls for the Nanticoke to Oakville and Oakville to Toronto line sections, for which the transient model update has been completed.

Request: Provide the following information:

a) Confirmation of whether or not pressure relief systems were installed or are proposed to be installed through the engineering controls applied to the Nanticoke to Oakville and the Oakville to Toronto line sections as recommended by DNV GL and required by Condition 4.a.iii. of Reference i).

b) If the answer to 1.2.a) is yes, provide the locations and schematics where overpressure relieving systems were or are proposed to be installed.

c) If the answer to 1.2.a) is no, provide a rationale explaining why a pressure relief system was not included or is not proposed to be installed.

d) Describe the recommended corrective, preventive and mitigative actions and the outcomes and results from the updated transient model, and confirm which operating pressure was taken into consideration to update the transient model.

e) Provide a timeline for the implementation of the recommended corrective, preventive and mitigative actions for the Nanticoke to Oakville and the Oakville to Toronto line sections.

f) Explain how the transient model updated for the Nanticoke to Oakville and the Oakville to Toronto line sections was validated.

1.3 TNPI Table 2 – Personnel Training and Competence (Operational Excellence Management System (OEMS) Element 5B – Learning and Competency)

Reference:
i) Amending Safety Order AO-002-SO-T217-03-2010
ii) TNPI Condition 5.c Report - Prevention Measures and Timelines dated 29 December 2016

iii) DNV GL Report – Review of Overpressure Incidents – Condition 5.a dated 21 December 2016
iv) *National Energy Board Onshore Pipeline Regulations* (OPR) section 6.5 (1) (v)
v) TNPI Condition 4.e.iv Report by Accountable Officer dated 22 December 2016

Preamble: Reference ii) Table 2 (page 5 of 7) provides a description of prevention measures proposed by TNPI to improve its personnel training and competence.

Table 2 provides limited detail addressing the two training and competence related recommendations made by DNV GL. For example Table 2 states that the Management System Processes training includes the management of change but does not provide any additional information on training content. The Board requires information demonstrating that the proposed prevention measures will address the underlying issues identified by DNV GL in its analysis.

Reference iv) states that the company shall establish and implement a process for evaluating the adequacy and effectiveness of the company's management system.

Page 6 of 9 of Reference v) states that "TNPI has an established self-assessment process that it uses to assess the adequacy and effectiveness of its OEMS". The Reference also states that one of the key aspects considered in completing the self-assessment is the degree of implementation of the required process.

The Board requires additional information regarding TNPI's process for evaluating the adequacy and effectiveness of its training development and implementation to ensure compliance with Reference iv).

Request: Provide the following information:

a) Confirm whether or not TNPI's prevention measure "updated hydraulic training for applicable groups" includes DNV GL's recommended "activities that can result in overpressure conditions" and "the mitigative measures to be taken to prevent such overpressure conditions".

b) If the answer to 1.3.a) is yes, provide supportive evidence that TNPI has included DNV GL's recommendations.

c) If the answer to 1.3.a) is no, provide rationale explaining why these recommendations were not included.

d) Confirm whether or not TNPI's prevention measure "Training strategy" includes evaluation of the effectiveness of each training course as well as the necessary refresher courses, and indicate how the effectiveness of each training course will be evaluated.

e) If the answer to 1.3.d) is yes, provide supportive evidence that demonstrates how the effectiveness of each training course will be evaluated.

f) If the answer to 1.3.d) is no, provide a rationale for why the effectiveness of the training is not included.

g) Explain the scope of leadership training. What level(s) of leadership will receive this training?

h) Explain the scope of the workgroup/position-specific training (e.g., safety, integrity, management of change (MOC), etc.) and provide examples.

i) Explain what elements other than the MOC are included in the management systems process training. What level(s) of staff will be receiving this training?

j) Explain whether the MOC training will be developed and implemented before or after a review of the adequacy of the MOC process and the implementation of necessary improvements.

1.4 TNPI Table 3 Learning from Events (OEMS Element 12 – Incident Management, Investigations and Corrective Actions)

Reference:
i) Amending Safety Order AO-002-SO-T217-03-2010
ii) TNPI Condition 5.c Report - Prevention Measures and Timelines dated 29 December 2016
iii) DNV GL Report – Review of Overpressure Incidents – Condition 5.a dated 21 December 2016
iv) *National Energy Board Onshore Pipeline Regulations* (OPR)

Preamble:
Reference ii) Table 3 (pages 6 and 7 of 7) provides a description of "Learning from Events" actions taken by TNPI to improve its incident management, investigations and corrective actions processes.

Reference iv) Section 6.5 (1) (r) requires companies to establish and implement a process for the internal reporting of hazards, potential hazards, incidents and near misses and for taking corrective and preventive actions, including the steps to manage imminent hazards.

Reference iv) Section 6.5 (1) (s) requires companies to establish and maintain a data management system for monitoring and analysing the trends in hazards, incidents and near-misses.

The Board seeks assurance that TNPI's prevention measures presented in Reference ii) Table 3 align with DNV GL recommendations within Reference iii), and are in compliance with Reference iv) requirements.

Request: Provide the following information:

a) Describe how incident investigation reports will be discussed across the organization (that is, areas other than pipeline integrity) in order to utilize lessons learned.

b) Describe how the updated procedure and risk based effectiveness process will be communicated to employees and shareholders.

c) Provide the enhanced TNPI reporting and investigation procedure and a detailed explanation of how TNPI's implemented Systematic Cause Analysis Technique (SCAT) methodology for incident investigation meets the Reference iv) requirements.

1.5 Incident 2009-057 Ottawa Lateral

Reference:
i) Amending Safety Order AO-002-SO-T217-03-2010;
ii) TNPI Condition 5.c Report - Prevention Measures and Timelines dated 29 December 2016
iii) DNV GL report – Review of Overpressure Incidents – Condition 5.a dated 21 December 2016

Preamble: Reference iii) Section 4.2.1 provides the Incident 2009-057 Ottawa Lateral analysis. DNV GL describes this incident as being on Ottawa Lateral line but the Board's records indicate that incident 2009-057 was in the Montreal area.

The Board requires a revised analysis of this incident.

Request: Provide a revised Incident 2009-057 analysis corresponding to the Montreal area, including recommendations, and update TNPI Table 1 to 3 of Reference ii), if required.

1.6 Incident 2012-054 Toronto Airport Junction

Reference:
i) Amending Safety Order AO-002-SO-T217-03-2010
ii) TNPI Condition 5.c Report - Prevention Measures and Timelines dated 29 December 2016
iii) DNV GL report – Review of Overpressure Incidents – Condition 5.a dated 21 December 2016

Preamble: The Board's investigation of Incident 2012-054 identified that TNPI did not adjust the thermal relief valve settings relative to the temporary reduced pressure restriction. TNPI's corrective actions presented during the incident investigation included the revision of the thermal relief valve settings to correspond to a maximum 110% of the reduced pressure imposed by the Board.

DNV GL's recommendations for improvement for incident 2012-054 described on pages 7-8 of 15 of Reference iii) include the following: improvement of the process for selection of critical equipment (e.g., risk control), improvement of the testing and maintenance program for critical equipment (e.g., asset management), and improvement of the process for communicating and implementing learnings from previous incidents (e.g., learning from events).

DNV GL's analysis does not identify other management system causes such as MOC, or operations control in the context of this incident, as result of the regulatory requirement for a pressure restriction on this pipeline.

The Board requires a revised analysis of this incident.

Request: Provide a revised Incident 2012-054 analysis, including management systems causes related to the inadequate thermal relief valve settings and update TNPI Table 1 to 3 of Reference ii), if required.

1.7 TNPI's completed prevention measures

Reference:
i) Amending Safety Order AO-002-SO-T217-03-2010
ii) TNPI Condition 5.c Report - Prevention Measures and Timelines dated 29 December 2016
iii) DNV GL report – Review of Overpressure Incidents – Condition 5.a dated 21 December 2016

Preamble: TNPI Tables 1-3 on pages 1-7 of Reference ii) describe several corrective actions that were completed at the time of the report filing. In order to evaluate the adequacy of these actions, the Board requires evidence of the completed corrective actions.

TNPI Table 3 on pages 6-7 of Reference ii) mentions an "internal shared system".

The Board requires more information about this system.

Request: Provide the following information and procedures:

a) Documents demonstrating the original and updated procedures for PLC maintenance and instructions issued for simultaneous deliveries into one tank (refer to Table 1 on page 3 of 7 of Reference ii).

b) A description of how the updated procedures referred to in 1.7.a) were communicated to management and staff.

c) Documents demonstrating the original and updated procedures for the "Reporting and Investigation procedure" which was enhanced in 2016 (refer to Table 1 page 6 of 7 of Reference ii).

d) Describe the "internal shared system" and how this system records and shares the status of recommendations with employees. For example, how does the system allow employees to view the status of their recommendation, such as the status of recommendation review or actions taken in response to the recommendation?

1.8 Concordance of TNPI management system elements with OPR

Reference:
i) Amending Safety Order AO-002-SO-T217-03-2010
ii) TNPI Condition 5.c Report - Prevention Measures and Timelines dated 29 December 2016
iii) DNV GL report – Review of Overpressure Incidents – Condition 5.a dated 21 December 2016
iv) *National Energy Board Onshore Pipeline Regulations* (OPR)
v) TNPI Condition 4.e.iv Report by Accountable Officer dated 22 December 2016

Preamble: Reference iii) Section 3 Process, states that DNV GL's review of overpressure incidents was guided by the DNV GL Systematic Cause Analysis Technique (SCAT) in combination with DNV GL International Sustainability Rating System (ISRS) elements.

Reference iii) Section 3 Process, notes that recommendations of corrective and preventive measures were developed based on the nature of the management system deficiency, one of the three categories being "Inadequate management system" with recommendations that might point to the need for a new system, process or procedure.

Reference iii) does not provide information demonstrating how the 15 elements of DNV GL's ISRS model capture each of the elements/sub-elements required by Section 6.1 through 6.5 – Management System of Reference iv).

Reference v) states that TNPI has met the requirements of the OPR section 6.5 (1) (v), (w), and (x), and TNPI's processes and records will be made promptly available upon request.

The Board requires additional information to determine if DNV GL's incident analysis findings and TNPI's subsequent corrective and preventive measures adequately address deficiencies related to TNPI's management system (e.g., lack of control(s)). Further, the Board requires additional information to determine if elements of TNPI's management system are in compliance with Sections 6.1 through 6.5 – Management System of Reference iv).

Request: Provide:

a) A list of TNPI's management system elements.

b) A description that demonstrates how the ISRS elements are in alignment with TNPI's management system.

c) A description of the evaluation of TNPI's management system compliance, including a concordance table that demonstrates how ISRS elements/sub-elements and TNPI's management system elements/sub-elements comply with the elements and sub-elements outlined in Sections 6.1 through 6.5 – Management System of Reference iv).