Caractéristiques techniques du pipeline et des installations

Intégrité des pipelines (normes et meilleures pratiques)

En réponse à des questions demeurées en suspens, M. Jake A. Abes, expert invité de la firme DNV GL, a fourni à la commission d'enquête, par courriel, les éléments d'information présentés ci-après. Le courriel intégral de M. Abes suit.

**Premièrement, M. Abes devait préciser quelles sections de la norme CSA Z662-15 sont pertinentes pour l'analyse ou la gestion du risque. Sa réponse :**

*a. Annex B* Guidelines for risk assessment of pipeline systems*. Annex B is an informative (i.e. non-mandatory) part of the Standard and provides guidelines on the application of risk assessment to pipeline systems.*

*b. Annex O* Reliability-based design and assessment (RBDA) of onshore non-sour service natural gas transmission pipelines*. Annex O is applicable only to gas transmission pipelines. It provides the option to perform a reliability-based approach to the design or assessment of such pipelines.*

*c. Risk management and risk assessment are also mentioned in Annex A* Safety and loss management system *and Annex N* Guidelines for pipeline integrity management programs*.*

*d. Clause 3.4* Risk management *sets out the mandatory requirement for companies to develop and implement a risk management process as part of their safety and loss management system.*

**Deuxièmement, M. Abes devait fournir la référence d'un rapport d'accident nord-américain pour une fuite de pétrole dans un oléoduc qui n'aurait pas été décelée par le système automatisé de détection des fuites. La référence donnée par M. Abes est la suivante :**

National Transportation Safety Board, 2013, *Pipeline Accident Brief*, document n$^{o}$ PAB-13-03, Washington, DC, National Transportation Safety Board, 13 p., [En ligne] http://www.ntsb.gov/investigations/AccidentReports/Reports/PAB1303.pdf

**Troisièmement, par courtoisie, M. Abes ajoute de l'information qui ne lui était pas demandée :**

*Examples of collateral damage from rail and pipeline transport*

*a. An incident resulting in damage to a pipeline from a train derailment occurred on May 12, 1989, in San Bernardino, California. Thirteen days after the derailment, a 14-inch pipeline at the derailment site ruptured, released gasoline, and ignited. The pipeline failure and subsequent fire resulted in 2 fatalities and 19 injuries. A copy of the report is available at* http://www.ntsb.gov/investigations/AccidentReports/Reports/RAR9002.pdf

*b. Attached is a NTSB report on a CN Train derailment in Illinois in 2009. The derailment resulted in damage to a gas pipeline that was in a casing and buried to a depth of 11 feet (3.3 m). At the time that the report was published, the US regulator (PHMSA) identified five reportable incidents since 1984 in which a train derailment caused damage to a pipeline crossing under the track.*

**[La référence du rapport mentionné est la suivante :**

**National Transportation Safety Board, 2012, *Derailment of CN Freight Train U70691-18 With Subsequent Hazardous Materials Release and Fire Cherry Valley, Illinois June 19, 2009*, document nº RAR-12-01, Washington, DC, National Transportation Safety Board, 101 p., (En ligne)**
**http://www.ntsb.gov/investigations/AccidentReports/Reports/RAR1201.pdf]**

*c. In 1989, a leak from a pipeline in Russia transporting high vapour pressure products (propane, butane) created a vapour cloud that was ignited when two passenger trains passed in the vicinity of the pipeline. Estimates of the size of the explosion have ranged from 250-300 tons of TNT equivalent up to 10,000 tons of TNT equivalent. According to official figures, 575 people died and more than 800 were injured.*
https://en.wikipedia.org/wiki/Ufa_train_disaster

**Le courriel intégral de M. Abes :**

Hi Frédéric,

It was good to finally meet you today.

Below are information pertaining to the undertakings assigned to me during today's session. Although I was not asked to provide information pertaining to rail derailment, it did come up during the session, so I'm providing the information below in case it is of interest to BAPE. The attached reports are available on the NTSB website.

1. CSA Z662 requirements for risk assessment/risk management
    a. Annex B *Guidelines for risk assessment of pipeline systems.* Annex B is an informative (i.e. non-mandatory) part of the Standard and provides guidelines on the application of risk assessment to pipeline systems.
    b. Annex O *Reliability-based design and assessment (RBDA) of onshore non-sour service natural gas transmission pipelines*. Annex O is applicable only to gas transmission pipelines. It provides the option to perform a reliability-based approach to the design or assessment of such pipelines.
    c. Risk management and risk assessment are also mentioned in Annex A *Safety and loss management system* and Annex N *Guidelines for pipeline integrity management programs.*
    d. Clause 3.4 *Risk management* sets out the mandatory requirement for companies to develop and implement a risk management process as part of their safety and loss management system.

2. Example of small leak not identified by the pipeline leak detection system
    a. Attached is a copy of the U.S. National Transportation Safety Board (NTSB) report on a 2010 Enbridge pipeline leak in Illinois. The leak was not identified by the leak detection system.
3. Examples of collateral damage from rail and pipeline transport
    a. An incident resulting in damage to a pipeline from a train derailment occurred on May 12, 1989, in San Bernardino, California. Thirteen days after the derailment, a 14-inch pipeline at the derailment site ruptured, released gasoline, and ignited. The pipeline failure and subsequent fire resulted in 2 fatalities and 19 injuries. A copy of the report is available at http://www.ntsb.gov/investigations/AccidentReports/Reports/RAR9002.pdf
    b. Attached is a NTSB report on a CN Train derailment in Illinois in 2009. The derailment resulted in damage to a gas pipeline that was in a casing and buried to a depth of 11 feet (3.3 m). At the time that the report was published, the US regulator (PHMSA) identified five reportable incidents since 1984 in which a train derailment caused damage to a pipeline crossing under the track.
    c. In 1989, a leak from a pipeline in Russia transporting high vapour pressure products (propane, butane) created a vapour cloud that was ignited when two passenger trains passed in the vicinity of the pipeline. Estimates of the size of the explosion have ranged from 250–300 tons of TNT equivalent up to 10,000 tons of TNT equivalent. According to official figures, 575 people died and more than 800 were injured. https://en.wikipedia.org/wiki/Ufa_train_disaster

Should you require additional information, please do not hesitate to contact me.

Kind regards

for Det Norske Veritas (Canada) Ltd.

**Jake Abes P. Eng.**

**President**

E-mail jake.abes@dnvgl.com
Mobile +1 403 999 3854 | Direct +1 403 291 7900

www.dnvgl.com | LinkedIn