



File OF-Surv-Inc-2009-112  
2 April 2013

To: All pipeline companies under National Energy Board Jurisdiction

**National Energy Board (the Board) Safety Advisory NEB SA 2013-001  
Pipe contact results in gas release and fire**

Following an incident that occurred during installation of a new section of pipe that resulted in a gas release and fire in September 2009, the Board has issued a safety advisory regarding proper identification and management of hazards that can arise at the interface of distribution and transmission systems due to differences between the practices of those industries.

On 30 September 2009, a contractor damaged a 2-inch threaded blow down nipple connected to a 24-inch gas line while performing work within the fenced boundaries of a facility that joins a natural gas transmission system to a distribution system. Subsequently, the gas ignited, damaging a building and destroying several vehicles and construction equipment. No workers or members of the public were injured, although nearby businesses, including a strip mall and day care centre, were evacuated as a precautionary measure. Damage to the environment was limited to local soil and vegetation inside the fenced area of the station property.

The immediate cause of the gas release and fire was contact with the two inch threaded nipple at the centre of a blind flange installed on the end of a length of existing 20-inch diameter pressurized pipeline that was open to the distribution system. This contact occurred while workers were lining up another length of pipe in preparation for welding it in place.

The NEB has made eight findings as to incident cause and contributing factors. The NEB identified the following factors that contributed to the event:

- inadequate hazard identification and mitigation;
- inadequate communication between company and contractor staff;
- inadequate contractor oversight; and
- ineffective operational control.

Companies are expected to have systems in place to identify and manage known or foreseeable hazards that workers or the public may be exposed to. The information related to this incident should be reviewed by company management. This hazard should be added to existing hazard inventories, as appropriate in order to proactively manage similar threats as part of a company's management system.

All workers present at a construction site must be made aware of the hazards so that they may participate in addressing those hazards and reducing risk. Companies are to have systems in place that promote actions at every level that contribute to a safe workplace.

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The NEB will take all available actions to protect Canadians and the environment and requires pipeline companies to anticipate, prevent, manage, and mitigate potentially dangerous conditions associated with their pipelines. As part of this, the NEB expects companies to have appropriately designed, well implemented, and regularly reviewed management systems that provide the tools necessary to conduct business in a manner that serves to keep people safe and protect the environment. The NEB holds its regulated companies accountable for the adequacy and effectiveness of their management systems in all work processes, including the work conducted by contract workers. The findings related to this incident can all be attributed to management system failures.

The safety advisory focuses on what the worker must look for when conducting activities near pressurized piping and the interface of transmission and distribution systems. The Board expects that the safety advisory will be given wide circulation to workers and any other personnel involved in maintenance and construction operations.

If you have any questions regarding these advisories, please contact Karen Duckworth at [karen.duckworth@neb-one.gc.ca](mailto:karen.duckworth@neb-one.gc.ca), 403-299-3669 or toll free at 1-800-899-1265. The full investigation report can be found at [Investigation Report](#)<sup>1</sup>.

Yours truly,



Sheri Young  
Secretary of the Board

Attachment

- c.c. Canadian Energy Pipeline Association, Facsimile 402-221-8760
- Canadian Association of Petroleum Producers, Facsimile 403-261-4622
- Provincial Pipeline Regulators
- ATCO Gas and Pipelines Ltd., Facsimile 403-245-7788
- ATCO Pipelines Edmonton Centre, Facsimile 780-420-7411
- SaskEnergy Incorporated, Facsimile 306-777-9991
- Gaz Metro Inc., Facsimile 418-577-3320
- BC Gas Inc., Facsimile 604-293-8749
- FortisBC, Facsimile 888-224-2720
- Union Gas, Facsimile 519-436-4621
- Heritage Gas, Facsimile 902-466-2140
- Enbridge Gas Distribution, Facsimile 506-452-2868
- Manitoba Hydro, Facsimile 204-360-6129

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<sup>1</sup> <http://www.neb-one.gc.ca/clf-nsi/rsftyndthnvrnmnt/sfty/nvstgtnrprt/nbrdggslgrsttn/nbrdggslgrsttn-eng.html>



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## **Pipe contact results in gas release and fire**

### **Incident Description**

On 30 September 2009, a contractor damaged a 2-inch blow down valve connected to a 24-inch gas line while performing work within the fenced boundaries of a facility that connects a natural gas transmission system to a distribution system. Subsequently the gas ignited, damaging a building and destroying several vehicles and construction equipment. No workers or members of the public were injured, although nearby businesses, including a strip mall and day care centre, were evacuated as a precautionary measure. Damage to the environment was limited to soil and vegetation inside the fenced area of the station property.

### **Cause of the Incident**

The immediate cause of the gas release and fire was contact with the 2-inch threaded nipple at the centre of a blind flange installed on the end of a length of existing pressurized pipeline that was open to the distribution system. This contact occurred while workers were lining up another length of pipe in preparation for welding it in place.

### **Preventive Actions**

Common practice in pipeline construction is to install a nipple on an existing piping system, enabling evacuation of gas prior to welding new pipe to the system; this allows continued operation during construction activities. Industry best practices require a closed valve upstream of a blind flange, or piping that contains a nipple. The valve should be a maximum of one pipe length from the flange or piping containing the nipple. This allows a margin of safety in the event that the nipple is damaged, or fails, during construction activities. This practice limits the volume of gas release to that contained in, at most, one length of pipe. In the case of the incident described above, the duration of the release would have been significantly shorter if an additional valve had been installed upstream of the activity or if the mainline valve 300 feet away from the activity had been closed.

Practices that may be considered typical for distribution systems, which are usually small diameter and lower pressure pipeline systems, cannot be applied to large diameter pipeline systems without appropriate hazard evaluations. Gas volume and pipeline size and pressure must be taken into consideration when conducting a hazard assessment of the piping plan and when conducting hazard assessments for tasks to be conducted each day.

For further information regarding this advisory, please contact the National Energy Board at 403-292-4800 or toll free at 1-800-899-1265 and ask for assistance from staff who deal with pipeline matters.