



Pipeline Safety

January 1997

Canada

Synopsis

The National Energy Board is responsible for promoting the safe construction and operation of federally regulated pipelines. This bulletin summarizes the Board's pipeline safety mandate, practices and procedures.

THE BOARD

The National Energy Board is an independent regulatory tribunal that was created by the Parliament of Canada in 1959. Its powers and jurisdiction are based on the *National Energy Board Act*, the *Canada Oil and Gas Operations Act* and certain provisions of the *Canada Petroleum Resources Act*. The purpose of the Board is to make decisions that are fair, objective, and respected. The Board achieves this purpose by regulating in the Canadian public interest certain areas of the oil, gas, and electric utility industries. Copies of the Acts are available from the Board and from the Canada Communications Group, Public Works and Government Services Canada, 45 Sacré-Coeur Blvd., Hull, Quebec, K1A 0S7.

PUBLICATIONS

This information bulletin is one of a series that the Board publishes on its activities and procedures. Comments on this bulletin or suggestions for future topics are welcome. These bulletins provide general information only. For details of particular items, reference must be made to the relevant legislation.

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Introduction

Pipelines transport oil and natural gas over great distances and ensure reliable supply for residential, commercial and industrial consumers. Even though the number of pipeline accidents is extremely low, the construction and operation of pipelines is not without risk.

The National Energy Board (the Board or the NEB) endeavours to ensure that such risks are properly managed and minimized.

The NEB's role in pipeline safety dates back to 1959, the year the Board was established. Parliament granted the Board responsibility for regulating certain matters regarding oil, gas and electricity, as well as advising the government on the development and use of energy resources. As a matter of primary public interest, safety was included in this mandate: pursuant to section 48 of the *National Energy Board Act* (the Act), the Board is empowered to promote safety and to make regulations which provide for the protection of property and the

environment, as well as the safety of the public and company employees in the design, construction, operation and abandonment of pipelines under its jurisdiction.

The NEB regulates over 39 000 km of pipeline crossing interprovincial and/or international boundaries of all the provinces and territories west of the Atlantic region. Pipeline systems which are wholly contained within a province typically fall under that province's regulatory jurisdiction.

The primary responsibility for the safety of pipelines rests with the facility owner. To ensure that companies design, construct, operate and abandon their facilities in a safe manner, the Board assesses pipeline and facility applications, develops and maintains regulations, conducts regular safety inspections, and audits and investigates accidents.

Pipeline and Facility Applications

Companies which are subject to the Board's jurisdiction must apply to the Board prior to constructing or modifying their facilities. In its examination of pipeline and facility applications, the Board considers relevant safety issues. It determines whether a proposed project meets regulatory requirements, and may examine issues such

as the suitability of a proposed design, construction techniques, materials and control systems, and the susceptibility of a pipeline to problems such as frost heave or slope instability. The Board may reject an application or attach conditions to its approval.

Development and Maintenance of Regulations

Onshore Pipeline Regulations

The *Onshore Pipeline Regulations* (OPR) set out minimum requirements for all stages of a pipeline's lifecycle. The Canadian Standards Association pipeline standards (CSA pipeline standards) provide a technical basis for the OPR by setting out the minimum technical requirements for the design, construction, operation and abandonment of pipelines. The Board participates with industry and other government agencies in the development and maintenance of these standards. If the Board finds that a CSA pipeline standard requirement is not sufficient for the pipelines under its jurisdiction, it may impose more stringent requirements within its own regulations. Copies of the *Onshore Pipeline Regulations*

are available through the Board's Regulatory Support Office or Library.

Pipeline Crossing Regulations, Parts I and II

One of the principal threats to pipeline integrity is the damage caused by third parties during excavation and construction activities. The Board's *Pipeline Crossing Regulations, Parts I and II* address this concern by establishing specific responsibilities for persons intending to conduct excavation or construction activities near pipelines, as well as the responsibilities of pipeline companies. The regulations require companies to establish ongoing awareness programs to inform the public of the presence of pipelines.

Excavation and Construction Near Pipelines and *Living and Working near Pipelines* are guides published and regularly updated by the Board. These brochures are distributed to pipeline companies, contractors, utilities, landowners

and the public, and are available through the Regulatory Support Office, the Engineering Branch or the Board's Library.

Safety Inspection and Audit Program

Pipeline Facility Inspections

The NEB conducts regular on-site safety inspections of the pipeline systems under its jurisdiction. Board inspection officers are empowered to make orders which could require a company to suspend hazardous activities and/or take measures to ensure the safety of the public and company employees, or the protection of property and the environment. The Board may also, if considered necessary, order a company to repair, reconstruct or alter a part of a pipeline. The Board may further direct that until such work is done, that part of the pipeline is not to be used, or is to be used only in accordance with terms and conditions specified by the Board.

Construction Inspections

Following the approval of pipeline facility applications, Board inspection officers may conduct field inspections during the construction phase. Construction inspections provide a measure of a company's compliance with regulatory requirements, with approved specifications and procedures, and the terms and conditions set out in the approval certificate or order. When construction is completed, the Board may require companies to apply for leave to open their pipeline facilities for service. This leave is only granted by the Board when it is satisfied that the pipeline may be operated safely.

Pipeline Crossing Audits and Inspections

The purpose of these audits is to determine the level of inspection performed by pipeline companies after the

pipeline begins operating, the awareness of local landowners and contractors about the precautions necessary for work around pipelines, the level of communication between all parties, and the general control of construction sites. This allows Board staff to meet with contractors, facility owners and pipeline company field personnel to discuss the regulations, to clarify public awareness responsibilities, and to follow up on any violation of the applicable regulations.

Documentation and Safety Audits

Documentation and safety audits are conducted at company offices to review procedures and records, to verify compliance with the regulations, and to address any safety issues. Audits examine operations and maintenance manuals, emergency procedures, safety training programs, inspection, maintenance and training records, and other company practices. Each company under the Board's jurisdiction is currently audited every two to four years. Audits may also be conducted in response to specific operational issues.

Human Resources Development Canada

The NEB and Human Resources Development Canada have entered into an agreement whereby Board staff administer Part II of the *Canada Labour Code* for pipelines under the Board's jurisdiction. This permits the designation of certain Board staff as Safety Officers for the occupational health and safety of pipeline company field staff. These health and safety duties are performed in combination with the Board's own safety program.

Pipeline Accidents

Accident Investigation

Accident investigations are an important activity within the Board's pipeline safety program. Even relatively minor accidents can provide an indication of the condi-

tion of a pipeline and may suggest non-compliance with a regulation, or the need for improvements to the policies and practices of the company, or the Board's safety programs.

Procedures in response to a reported accident depend on the severity of the accident. For less significant accidents such as minor gas leaks or oil spills, the Board normally accepts a company's report without on-site investigation by the Board. For major accidents involving serious injury or the release of large volumes of oil or natural gas, the Board normally conducts detailed on-site investigations and may produce a report containing its findings and recommendations.

Should recurring similar accidents or a major accident cause a concern with a company's safety practices or facilities, meetings between the company and Board staff may result. An accident file is not closed until the Board is confident that all reasonable corrective measures have been taken to prevent future similar accidents.

Accident Reporting

Companies are required to immediately report to the Board any incident involving the construction or operation of a pipeline which results in a fatality or injury requiring hospitalization, a fire or explosion, an oil spill, a pipeline rupture, or any other failure or malfunction of the pipeline. The Board maintains a 24 hour reporting line for companies so that Board staff can be contacted directly if the necessity arises.

Transportation Safety Board of Canada

Accidents which occur during the operation of a pipeline are also reportable to the Transportation Safety Board of Canada (TSB). If the TSB decides to conduct an investigation, the NEB is prohibited from making

findings as to the cause and contributing factors of the accident. However, the NEB may still investigate an accident to ensure that its regulations were not violated and/or to determine the need for remedial action.

The TSB has the authority to issue recommendations to the Minister of Natural Resources on ways to eliminate or reduce safety deficiencies. The Board may be required to develop a response for the Minister on the recommendations, and to advise the Minister on what has been done to address the safety issue(s). Such responses can include the results of an NEB study, an assessment of the need for further work, and any regulatory response taken by the Board.

Conclusion

This information bulletin provides a brief summary of how the Board carries out its pipeline safety mandate. The Board also has safety responsibilities with regard to oil and gas activities on frontier lands, as legislated under the *Canada Oil and Gas Operations Act* and occupational health and safety legislation. For further information please contact the Communications Group or the Regulatory Support Office at:

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