



## REASSESSMENT OF THE RESPONSE TO PIPELINE SAFETY RECOMMENDATION P97-02 – P95H0036

### Background

On 29 July 1995, a rupture and fire occurred on the TransCanada PipeLines Limited (TCPL) 42-inch natural gas pipeline near Rapid City, Manitoba. A second rupture and fire subsequently occurred on TCPL's 36-inch natural gas pipeline adjacent to the first rupture location. There were no injuries.

The force of the explosion eliminated all communication elements to and from the station. Thus, the regional operations controller (ROC) had no control over the emergency shutdown (ESD) system due to the collateral damage to the plant's telecommunication equipment.

The Transportation Safety Board of Canada (the Board) determined that the initial rupture was caused by a ductile overload fracture as a result of external stress corrosion cracking and that the secondary rupture was the result of heat overload from the initial fire and the delay in shutting down the 42-inch line.

The Board concluded its investigation and released report P95H0036 on 10 June 1997.

### Board Recommendation P97-02

The Board recognizes that compressor stations are often unstaffed. Nevertheless, as a backup to the remote system defences for ESD, company employees should be capable of initiating an ESD locally. The Board recommends that, as part of the design review of Recommendation P97-01:

The National Energy Board reassess the adequacy of the emergency shut-down systems at compressor stations, with a view to ensuring that operators are aware of the operating status of the system under emergency conditions.

P97-02

### Response to P97-02 (7 November 1997)

The National Energy Board (NEB) accepted the recommendation and prepared an information request for companies under its jurisdiction regarding their ESD systems and procedures.

### **Board Assessment of Response to P97-02 (30 January 1998)**

Since the NEB accepted the recommendation and indicated that it was in the process of gathering information from all pipeline companies under its jurisdiction regarding the status of existing ESD procedures and systems, the response to Recommendation P97-02 was assessed as *"Satisfactory Intent"*.

### **Board Reassessment of Response to P97-02 (February 2006)**

The NEB indicated that the information was evaluated both individually and collectively and that it uses the information to assess new facilities and to increase awareness of ESD issues when evaluating existing facilities. The NEB also indicated that no unacceptable or unmitigated risks were identified. However, since the NEB had not produced a documented summary or quantitative analysis, the Board reassessed the response to this recommendation as *"Unsatisfactory"*.

### **Additional Response to P97-02 (January 2011)**

The NEB indicated that companies now conduct risk assessments during the pipeline design stage to ensure that ESD devices at compressor stations are located so that they can function as intended. In addition, ESD technology has improved since 1997 so that pipeline systems can be better monitored during emergency situations. The NEB indicated that pursuant to the NEB Regulations, pipeline companies now have in place safety programs to anticipate, prevent, manage and mitigate potentially dangerous situations, such as the effectiveness of ESD systems at compressor stations, during emergency activities. Furthermore, the NEB conducts compliance monitoring, comprising inspections, audits and incident investigations, to verify that the safety programs are functioning as intended.

### **Board Reassessment of Response to P97-02 (February 2011)**

Improvements in ESD technology, as well as risk assessments conducted during pipeline design should ensure that ESD systems are effective during emergency situations at compressor stations. These measures are supported by the implementation of safety programs and regulatory compliance monitoring. Therefore, the Board has reassessed the response to this recommendation as *"Fully Satisfactory"*.

### **Next TSB Action**

This deficiency file is assigned an *"Inactive"* status.