

HUSKY INCIDENT - SUBMISSION NOVEMBER 17, 2016

INVESTIGATION SUMMARY

OVERVIEW

Husky has completed a thorough investigation into the 16TAN pipeline incident and submitted its report to regulators. The report addresses the cause of the incident and identifies actions to prevent a similar incident.

The investigation was informed by reviews conducted by internal and external experts covering the following areas: metallurgical, geotechnical, pipeline integrity, leak detection system performance and operator response.

Stantec Consulting's geotechnical report, filed on IRIS, has concluded that the pipeline break was the result of geotechnical activity (ground movement). Acuren Group's metallurgical report, filed on IRIS, has concluded that the break was a sudden, one-time event in a section of the pipe that had buckled due to the force of ground movement. Its report also concluded the break was not the result of material defects, deficiencies or corrosion.

Based on its findings, Husky is moving forward with a number of immediate actions while regulators continue with their review.

BACKGROUND

PIPELINE SYSTEM AND MANAGEMENT

The 16TAN pipeline, part of the Saskatchewan Gathering System (SGS), was designed and constructed in accordance with applicable standards, including Oil and Gas Pipeline Systems CSA Z662 design criteria. It was constructed in 1997 and had performed without incident.

Husky has a comprehensive pipeline integrity management program, which includes numerous steps taken to mitigate and monitor for risk management and reduction. These include periodic In-Line Inspections, monthly pigging, corrosion inhibition, fluid analysis, bacteria testing, aerial inspections, coatings and cathodic protection.

The SGS has two separate leak detection systems that meet or exceed the technological requirements set out in regulation and the associated CSA mandatory industry standard. Both are integrated with the Supervisory Control and Data Acquisition System (SCADA). The field sensors are maintained to a high standard and the leak detection system is tuned regularly. Control room operators are provided with systematic, thorough training. The leak detection systems and operator response are routinely tested.

INCIDENT SUMMARY

On the morning of July 21, Husky discovered a leak on the 16TAN pipeline where it crosses the North Saskatchewan River. The pipeline was immediately isolated at the river crossing valves and spill response crews were dispatched.

The break occurred on land, approximately 160 metres from the riverbank on the south slope of the river. An estimated 225m³ (+/- 10%) of crude blended with condensate was released from the pipeline, and about 40 percent of this volume entered the river. When the shoreline cleanup was concluded in October, 210 m³ had been accounted for.

The pipeline break was caused by geotechnical activity. The break was a sudden, one-time event in a section of the pipe that had buckled due to the force of ground movement. When the pipeline was installed in 1997, a geotechnical assessment prepared for Husky by a third party concluded that the area was inactive.

Prior to the event, several planned activities were taking place on the SGS. This included planned startups and shutdowns to tie-in a new condensate line, an update to one of the leak detection models and work which required two pressure transmitters to be blocked in. Under such circumstances it is common for the leak detection system to register anomalies.

The investigation has concluded that during the event the operators responded appropriately to the data being observed and took proper steps to investigate.

ACTIONS

While the investigation has concluded the SGS was designed and constructed in accordance with applicable standards and operators responded appropriately, Husky is implementing improvements to the systems and operating procedures. A number of actions are being undertaken, including the following:

1. Consistent with current procedures, Husky will ensure geotechnical risks are addressed and re-assessed over the life of a pipeline with mitigation and monitoring strategies. This would include route selection, design consideration for stress relief through excavation, and additional monitoring technologies such as inclinometers.
 2. Application of additional safety loading factors to locations which are susceptible to potential geotechnical risk, which would increase the force that could be exerted on the pipeline.
 3. Husky is reviewing and consolidating existing leak detection processes and procedures. Improvements will include a defined time period for diagnostic analysis before proceeding to a mandatory shutdown.
 4. Husky is adjusting variables on the leak detection systems to reduce the number of false alarms.
-