

News Release

FOR RELEASE AT 12:00 NOON

EUB ISSUES REPORT ON BP ETHANE CAVERN WELL FIRES

Calgary, Alberta (April 18, 2002) Today the Alberta Energy and Utilities Board (EUB) issued a report on its investigation into the BP Canada Energy Company (BP) ethane well fires that occurred from August 26 to September 3, 2001, at the BP plant site in Fort Saskatchewan, Alberta. The report summarizes EUB findings from its investigation of this incident.

The cause of the incident was the failure on an elbow of a 2-inch (60.3 millimetre) outside diameter line connecting two wellheads that service the ethane storage cavern. The EUB is satisfied that unusual forging defects caused the elbow to fail. These defects would not be detectable through conventional testing methods. The failure of this elbow resulted in ethane product being released to atmosphere, creating an ethane vapour “plume” which ignited through contact with overhead power lines located on the plant site. The fire was contained within the site, and there were no injuries to plant personnel or members of the public.

At the time of the issuance of this report, BP’s ethane storage cavern is out of operation and will remain so until approval to resume operations is granted by the EUB. Since the incident, equipment design changes carried out by BP effectively ensure that a similar incident will not recur. In addition, the EUB intends to advance a regulatory change that an approved emergency response plan be required for all NGL cavern storage facilities. Plans would include effective ignition criteria. The EUB intends to pursue this requirement through regulatory changes, preceded by consultations with appropriate public parties, government agencies, and industry.

A backgrounder associated with this news release provides some additional information on this incident and EUB’s Post-Incident Report resulting from its investigation.

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This news release, associated backgrounder and the EUB Post-Incident Report on the BP Canada Energy Company Ethane Cavern Well Fires are available on the EUB Web site at <http://www.eub.gov.ab.ca> Hardcopies of these documents are also available from the Protective Services Director of the City of Fort Saskatchewan: 10099-93 Avenue Fort Saskatchewan, Alberta, T8L 1N5 – (780) 998-4858.

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Backgrounder

EUB Issues Report On BP Ethane Cavern Well Fires - April 18, 2002

The intent of EUB's investigation in this incident is similar to those involving other field incidents, regardless of their specific circumstances. EUB investigations are aimed at ensuring that information pertaining to the incident is analyzed, the root cause of the problem is identified and understood, and as far as possible, corrective actions to either design standards or operating practices are implemented in order to prevent a similar occurrence.

The Incident

BP Canada Energy Resources Company (BP) operates a natural gas liquids (NGL) plant located about 6 kilometers northeast of Fort Saskatchewan, Alberta. NGL products are stored on site and delivered through pipelines to a number of locations in Alberta, eastern Canada and the United States. On August 26, 2001, an elbow on a 2-inch (60.3 millimetre) diameter line connecting two wellheads that service one of the storage caverns failed. The failure of this elbow resulted in ethane product being released to atmosphere, creating an ethane vapour "plume" which ignited through contact with overhead power lines located on the plant site.

There were no injuries as a result of the fire. Black smoke was observable for many kilometres away. Although this incident generated significant interest from the media and general public, there was no threat to members of the public or their property. Throughout the incident the fire was contained within the plant site.

Environmental impacts caused by the incident were primarily emissions of soot and other particulate matter from the fire in the early stages of the incident. Air samplings indicated that provincial air quality guidelines were not exceeded.

The fire at the plant site continued to burn in a decreasing manner until September 3. In the days following, most plant and pipeline operations, except those involving the wells, pipelines and ethane storage cavern directly associated with the incident, resumed normal operations.

BP Ethane Cavern Operations

At the BP plant site, one of the underground storage caverns (called cavern 103) is used for the storage of ethane, an NGL product with many uses in the petrochemical industry. Wellhead and equipment configurations associated with this storage facility include a 2-inch outside diameter connecting line (about 60 feet in length) between two wells located above the cavern. These wells, wells 103 (ethane product) and 103A (brine), were designed to be able to both produce and inject their respective fluids.

Within the storage cavern, the ethane does not mix with the brine water but settles on the upper layer, similar to typical "oil on water" fluid mixtures. By coordinating well 103 and 103A production and injection operations, the ethane storage cavern levels can be adjusted to store and/or produce ethane for disposition to market. Cavern 103 was completed in the "Lotsberg Salt" formation at a depth of about 1850 metres and has a capacity to hold about 127 thousand cubic metres (10^3 m^3) of product. At the start of the incident, there were approximately 76000 m^3 of ethane in the cavern. About 14500 m^3 of ethane product was lost as a result of the incident.

EUB Investigation Conclusions

EUB investigation conclusions include, among others, the following items:

- The cause of the incident was the failure on an elbow of a 2-inch line connecting two wellheads that service the ethane storage cavern. The EUB is satisfied that unusual transverse forging defects caused the elbow to fail. These defects would not be detectable through conventional testing methods. The failure of the elbow resulted in ethane product being released to atmosphere, creating an ethane vapour “plume” that ignited through contact with overhead power lines located on the plant site.
- BP’s ignition policy at this site was inadequate to effectively address the decision-making criteria to ignite an NGL release.
- Although there was significant smoke from the fire, particularly in the first 48 hours after ignition, the fire was contained entirely on site and there was no threat to public safety. There were no injuries to members of the public, no injuries to incident response personnel (except for a minor injury, a cut finger), and no property damage outside of the plant site itself.
- BP and the City of Fort Saskatchewan understood and met their emergency response responsibilities. However, early public notification by BP did not meet public expectations.
- Environmental impacts of the incident were primarily emissions of soot and other particulate matter from the fires in the early stages. In addition, a small release of brine (salt) water into the North Saskatchewan River occurred during early fire control efforts
- The measures taken by BP and affected industries to minimize the effects of the incident on industry operations were appropriate.

Actions Initiated to Prevent a Recurrence

- BP has eliminated the 2-inch line between wells 103 and 103A. A similar line on BP cavern 106 has also been taken out of service.
- BP must provide the EUB with updated ignition criteria and procedures for ignition at its Fort Saskatchewan site within three months of the issuance of this report.
- Storage operations in cavern 103 will not resume until BP has EUB approval. BP must demonstrate to the satisfaction of the EUB that integrity of the caverns and wellbore exists through integrity testing as per the standards set out in Canadian Standards Association document *CSA Z341-98*.
- An EUB-approved emergency response plan will be required for all cavern storage facilities. Each plan should include clear ignition criteria. The EUB intends to pursue this requirement through regulatory changes, preceded by consultations with appropriate public parties, government agencies, and industry.

In addition to the above, the EUB believes that some improvements to early communication processes involving local residents are warranted in any future responses from BP or other operators in the area concerning an incident of similar high visibility. These would primarily be aimed at better informing those in the surrounding area as quickly as possible after an incident has occurred, thereby helping to reduce concerns by local area residents and other members of the public.

The City of Fort Saskatchewan and the Northeast Capital Industrial Association (NCIA) have been involved in various discussions aimed at furthering a more comprehensive and integrated response approach for the industrial operators in the area. The EUB supports these efforts and encourages NCIA, operators, and other stakeholder groups in the area to continue to work with the City of Fort Saskatchewan and other local authorities in developing a better public notification protocol and system.

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