

Gas Compressor Explosion Fire

SAFETY ALERT

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Enform

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An Industry Product

This document was developed by industry for industry. Working collaboratively, Enform works with the submitting organization representative in developing these documents to improve the industry's hazard awareness. Canada's leading oil and gas industry trade associations support the use of shared information to help companies of all sizes improve performance.

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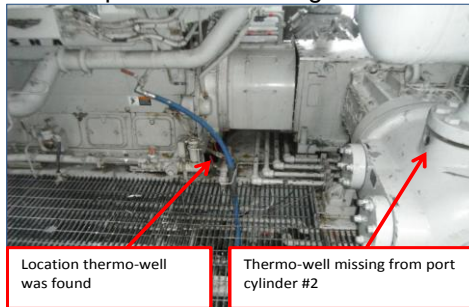
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For more information on this event,
please contact: safety@enform.ca

Description of Incident:

- On April 6, at approximately 2230h, a fire and explosion occurred within a compressor building.
- The facility ESD activated at the point of explosion shutting down all units and the plant depressurized to flare.
- Operations personnel at site responded by activating the Emergency Response Plan (ERP) and local response team extinguished a small fire still burning within the compressor building.



What Caused It:

- A thermo-well assembly on the compressor second stage suction cylinder became dislodged releasing gas under pressure through a 1/2" NPT opening.
- Gas buildup inside the building was ignited at approximately the same time as fire and gas detection system activated the ESD.
- Most probable ignition source is the compressor engine turbocharger. Other potential sources include static or mechanical spark when thermo-well assembly dislodged.

Corrective/Preventive Actions:

- Conduct an inspection on all compressor thermo-well assemblies and other pressure associated threaded fittings to ensure they are installed and being maintained in accordance to manufacturer specifications.
- Ensure personnel working on or in proximity to thermo-well assemblies and other pressure associated threaded fittings have the appropriate training and access to approved work procedures.
- Review fire and gas detection control philosophy and placement to ensure that systems are able to effectively monitor enclosed areas for hazardous condition and provide a timely shut down in response to significant leaks or loss of containment from process piping under pressure.
- Review preventative maintenance (PM) processes to ensure that thermo-well assemblies and other pressure associated threaded fittings are part of the PM program where required.

By industry, for industry