

SAFETY ALERT



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Saturated Glycol Handling Leads to Fire



Fire damage was caused when an unattended glycol reboiler was starting up. The glycol and hydrogen condensate ignited.

In January 2019, a fire occurred on a production platform resulting in damage to a glycol reboiler unit and compressor building.

Prior to the fire, and after an extended shut-in, platform personnel began the platform start-up process. The field foreman ignited the glycol reboiler and set the temperature to 200° F. The foreman continued the start up by increasing the temperature to 250° F, but did not initiate circulating the reboiler fluid contents. The field foreman left the glycol reboiler unattended to handle a compressor shutdown and other duties as the temperature increased. Less than 90 minutes later, a mechanic observed a large flame on the side of the platform where the glycol reboiler unit is located.

BSEE's investigation revealed that the operator's start-up procedure did not provide specifics on the rate of temperature increase when starting the reboiler after an extended shut-in, nor did the procedure note that the reboiler should not be left unattended during start-up.

The fluid in the glycol reboiler had approximately 21% water content at the time of startup, possibly due to the extended shut-in. During normal operations, the typical water content of the reboiler should be less than 6%.

BSEE determined the cause of the fire to be high water content combined with a rapid increase in temperature, which flooded the still column; the flooded still column expelled glycol and hydrocarbon condensate onto the reboiler stack, where it ignited.

Therefore, BSEE recommends that operators consider the following:

- Provide advanced training to personnel who work with glycol units to address handling saturated glycol safely;
- Ensure that procedures specify that glycol system start-up should be a manned operation;
- Ensure that procedures specify circulation time before increasing boiler temperature; and
- Review reboiler stack installations and consider adding insulation to mitigate the stack as an ignition source.

For more information on this incident, see the incident report [here](#) or at the following url: <https://on.doi.gov/2nPJGr7>

A Safety Alert is a tool used by BSEE to inform the offshore oil and gas industry of the circumstances surrounding a potential safety issue. It also contains recommendations that could assist avoiding potential incidents on the Outer Continental Shelf.