

# SAFETY ALERT



**Safety Alert No. 385**  
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## Improper Installation of Safety Devices on Heater Treaters



*A Temperature Safety High (TSH) with Teflon tape on the threads. Teflon tape reduces the heat sink effect.*



*The TSH is not extended far enough into the heat media. As a result, the Temperature Indicator (TI) is unable to register a proper temperature.*

In September 2019, a production process alarm on a heater treater activated when the burner went offline. Workers relit the burner in attempt to reestablish the temperature and continue operations but later recorded readings of over 1,000° Fahrenheit and noticed the stack glowing red. The foreman manually shut-in the treater and all production after seeing its condition. Investigations into this incident revealed multiple contributing factors with the installation of safety devices that were common in other heater treater incidents, such as:

- Inadequate length of Temperature Safety High (TSH) safety device thermowells: The thermowells often did not extend into the media, leading to inaccurate temperature readings and the TSH not functioning as desired.

- Improper installation of TSH safety devices, such as the use of Teflon tape during installation of a media device: The threads on the TSH are part of the heat sink process and Teflon tape reduces heat sink.
- Inadequate length of a media Temperature Indicator (TI): When a TI remains inside a vessel's nozzle and does not extend into the media, it can lead to inaccurate temperature readings.
- Partially plugged Flame and Stack Arrestors did not allow proper airflow or heat to escape.

**Therefore, BSEE recommends that operators and contractors consider the following:**

- Ensure the thermowells for the liquid media's TSH and temperature indicator/gauges extend far enough past the vessel's nozzle and into the media to get correct temperature readings;
- Confirm that all safety devices and critical indicators are installed correctly prior to initial start-up;
- Ensure safety devices, such as TSHs, are installed in accordance with manufacture recommendations and not with Teflon tape;
- Verify that scheduled maintenance and inspections on safety devices are performed as required;
- Consider inspecting flame arrestors and stack arrestor devices periodically and replacing them when damaged; and,
- Consider inspecting and replacing TSH devices periodically to ensure proper temperature safety management of fired vessels. Note: This device generally cannot be field tested.

--BSEE--

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.