

Safety Alert

BOEM

**U.S. Department of the Interior
Bureau of Ocean Energy Management,
Regulation, and Enforcement
Gulf of Mexico OCS Region**

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Hot Bolting Fire

Hot bolting, the practice of removing and replacing or freeing and re-tightening bolts on live piping and equipment, was being performed on a contact tower's inlet valve flange when the operator inadvertently struck and broke a grease fitting with a hammer. The fitting released high pressure gas into the direction of the line heater located approximately 10 feet from the contact tower's inlet valve. The gas ignited and was eventually extinguished using dry chemical. No injuries were associated with the incident.

A BOEM (formally MMS) investigation into this incident revealed that although a task-specific Job Safety Analysis (JSA) was conducted prior to initiating the hot bolting project, the following critical hazards and mitigating measures were not identified:

- The fired component of the line heater was not shut-in prior to initiating the project.
- The close proximity of the grease fitting was not identified as being a potential hazard.

Although hot bolting is a common practice in the Gulf of Mexico, each case should be evaluated for feasibility. In a situation where there is a heat source in the immediate area with the possibility of flammable contents being released, hot bolting is not advised. A safer option would be to shut-in the effected equipment and bleed off all pressure before commencing the bolting operation. Should hot bolting be performed, BOEM recommends the following:

- A JSA should be conducted to identify all potential hazards, the potential consequences, with necessary mitigations and/or precautions. Specific consideration should be given to potential sources of release and ignition points.
- The JSA process should be used to review site-specific detailed job steps and uncover hazards associated with the specific job undertaken. Refer to Safety Alert #276 for additional information regarding JSAs.
- Operators should use only non-sparking tools when conducting hot bolting operations.
- Contingency plans (including communication and emergency equipment) should be in place prior to the start of the job.

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