Bureau of Safety and Environmental Enforcement

SAFETY ALERT

Safety Alert No. 471

Oct. 26, 2023

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# Pipe Bond Failure on Firefighting System Investigated and Repaired

*Figure 1: FRP pipes separated from flanges.*

BSEE received notification of an incident involving the separation of a section of fiber reinforced plastic pipe (FRP) from its flange. As a safety precaution, production was immediately halted to investigate the situation. During the inspection, the team discovered that a segment of 10-inch FRP piping had disengaged from its attached flange, resulting in a 4-inch pipe also becoming detached due to the movement of the 10-inch pipe (see image above).

To address the issue, the affected fire loop main was promptly isolated from the rest of the system, allowing the remainder of the system to resume normal operation. Repairs were swiftly carried out on the fire main, and once the necessary repairs were completed, production at the facility resumed.

The operator identified a bond failure as a potential cause of the separation, which was subsequently addressed to prevent any reoccurrence.

Therefore, BSEE recommends operators and contractors consider the following:

- Reviewing preventative maintenance records and ensuring adequate inspection and routine checks of firefighting equipment.
- Providing instructions, training, competency assessments, and proper supervision to operators and maintenance personnel.
- Testing, if possible, the connection between the FRP pipe and flange to ensure an adequate seal.
- Visually checking for leaks while the mains are pressurized during routine firewater system tests. According to regulations for fire water systems (as per API RP 14G 4th Edition, Section 5.2), it is essential to maintain sufficient pressure (a minimum of 75 psig) when hose streams are flowing, unless the nozzle manufacturer specifies higher pressure requirements. Even a fire water system with small leaks may initially meet the pressure requirement, but addressing smaller leaks promptly can prevent more significant failures from occurring.

– 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.

**Category:** Component Failure, Pipe Handling, Well Operations, Structural, Fire