



Safety Alert No. 470

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Bypass of Emergency Shutdown in Rented Equipment Results in Additional Risk to Personnel and the Environment



Figure 1: Rental generator/light plant.



Figure 2: ESD for rental generator/light plant found in bypass.

During a BSEE offshore regulatory inspection of a coiled tubing unit (CTU) layout and rig up, inspectors discovered a concerning issue with the rental generator/light plant powering the CTU. Specifically, they found evidence of tampering with the emergency shutdown (ESD) and spark arrestor system. The ESD had been bypassed by removing the air intake hose, which had become clogged with black soot, causing it to collapse and leading to issues such as sputtering, smoking, and eventually engine failure. The air intake hose was never re-installed, resulting in the continued bypass of the ESD. In addition, the inside of the generator/light plant was coated with black soot due to a damaged muffler.

In response to these findings, the inspection team requested that the operator (personnel on duty) test the ESD to confirm its functionality. The test revealed the ESD failed to properly shut down the power-generating unit, as designed.

It is crucial to note that ESD systems are specifically designed to prevent unsafe operations by automatically shutting down equipment and offshore facility systems in the event of unsafe conditions. In this case, the ESD for the rental generator/ light was configured to shut down both the generator/light plant itself and the CTU.

The ESD system bypass placed personnel at additional risk for various hazards, including fire, explosion, inhalation, rotating equipment, moving equipment, pinch points, unexpected pressure releases, and dropped objects. Immediate corrective actions should be taken to rectify these safety concerns and ensure the proper functioning of the ESD system to mitigate risks effectively.

In addition, BSEE recommends that operators and their contractors, where appropriate, consider doing the following:

- Ensuring reviewed and approved Management of Change or Lock Out Tag Out procedures are in place, offering protection for the system or piece of equipment if the ESD must be placed in bypass for maintenance, testing, or troubleshooting purposes.
- Examining rental equipment arriving onsite for obvious signs of damage, lack of maintenance, improper operation, over-heating, or over-pressure. Stopping the job until all such issues have been resolved, equipment has been successfully function tested, and is fully functional for operations.
- Reviewing preventative maintenance records and ensuring adequate inspection and functional performance of rental equipment before use.
- Providing instructions, training, competency assessment, and proper supervision to operators and maintenance personnel.
- Ensuring compliance with 30 CFR 250.867 (a), (c), and (d) (Temporary quarters and temporary equipment) and 250.842(a)(2) and (3) (Approval of safety systems design and installation features).
- Inspecting generators and critical equipment in accordance with BSEE regulations, ensuring all meet the minimum safety requirements and the recommendations provided by manufacturers. These inspections should be documented to maintain a clear record of equipment integrity and performance. Each inspection and test should verify:
 1. Inspections Were Performed at Appropriate Intervals: Inspecting generators and critical equipment at intervals specified by BSEE

regulations and manufacturer guidelines to guarantee compliance and optimal functionality.

2. Proper Documentation is Provided: Maintaining comprehensive records of each inspection and test, including:
 - a. **Date of Inspection and Test:** Clearly note the date when the inspection and testing took place.
 - b. **Equipment Identifier:** Include the serial number or any unique identifier associated with the specific equipment that underwent inspection or testing.
 - c. **Description:** Provide a detailed description of the inspection or test procedures conducted to ensure clarity and accountability.
 - d. **Inspection Results:** Document the outcomes and findings of the inspection or test, including any issues, concerns, or areas that require corrective action.
- Reviewing [Safety Alert 432](#) BSEE Identifies Maintenance and Certification Issues of Rental Generators.

– 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: Other