SAFETY ALERT

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Breakdowns in Communication and Preparation Lead to Failure of Synthetic Slings

Figure 1. One of the Two Frayed / Parted Synthetic Slings from the Incident

Figure 2. Gantry Contacting and Damaging the Cable Tray and Bending the Main Deck Handrail

In May 2021, an incident occurred when a contract crane operator and two contract mechanics demobilized the facility's gantry crane in preparation for the arrival of a platform rig package.

After holding a morning safety meeting, the crew proceeded to prepare for the demobilization. To remove the gantry by use of a rental crane, the lift required the application of two synthetic (i.e., polyester) slings on the rental crane auxiliary line in combination with a two-part wire rope sling on the rental crane main line. The two polyester slings were tied to the bottom section of the gantry to assist with the orientation of the load. When attempting to lift and rotate a section of the gantry, one of the polyester slings failed, which caused the weight to shift to the remaining polyester sling. As a result of this additional weight, the secondary polyester sling subsequently failed (Figure 1). With the slings compromised, the load fell approximately six feet to the deck, striking a handrail and a portion of the facility's cable tray containing electrical wiring (Figure 2). There were no injuries associated with this event.

Multiple incident findings were identified through the operator's formal investigation:

- There was no safe lifting plan created for the non-routine lift.
- Management failed to make available operational procedures to the crew for the disassembly of the gantry crane.
- The Job Safety Analysis (JSA) completed for the operation was a pre-completed template version that did not contain details for safely rotating the load.
- Despite personnel anticipating the weight of the load to be 9,000 pounds, the actual reading was more than 15,000 pounds once the load was set on the main block. The initial calculations failed to consider additional crane components, such as the winch, ladder, and ropes.
- Personnel improperly rigged the slings using a choker configuration. This sling arrangement did not have the capacity to safely lift the original 9,000-pound anticipated weight.
- The crane operator failed to initiate Stop Work Authority (SWA) when observing the increased recorded weight on the load cell in conjunction with the slings being utilized for the lift. The crane operator was hesitant to question the expertise of the lead mechanic.

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

- Developing and following specific safe lifting plans based on the scope of crane operations (e.g., heavy lifts, blind lifts, etc.).
- Ensuring applicable personnel have access to the necessary operating procedures and understand them prior to performing work.
- Confirming all communication is established and agreed upon between applicable personnel prior to commencing tasks.
- Reviewing JSAs for high-risk operations and verifying they include job-specific instructions and associated mitigations for potential hazards.
- Incorporating an additional verification measure for confirming the accuracy of load weight calculations prior to commencing operations. Reviewing calculations when discussing operational procedures could help to verify the information.
- Ensuring slings are rigged in the most advantageous configuration to secure the load through the entirety of the lift.
- Initiating SWA and reassessing the job scope if any activity is observed to be unsafe or unforeseen, despite positional ranking, years of experience, or seniority level.

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: Crane / Lifting