Bureau of Safety and Environmental Enforcement

SAFETY ALERT

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Inspect A2B Systems and Wire Rope Terminations to Prevent Crane Hazards

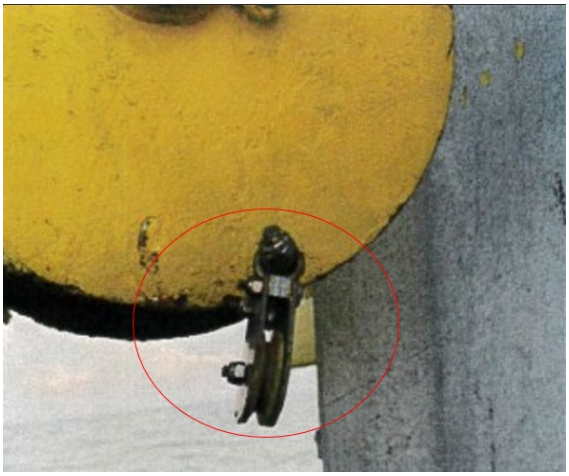

Figure 1-Damaged A2B pulley with bent bolt caused the cable to ride on the frame instead of the pulley wheel.

Figure 2-A2B cable failure resulted in the weight falling directly onto the deck.

Background:

The Bureau of Safety and Environmental Enforcement Gulf of America Region recently investigated a crane incident aboard a lift boat conducting decommissioning and diving operations at an offshore platform.

During lifting operations, the lift boat crane's anti–two-block, or A2B, weight detached from its anchor point at the boom tip. The weight slid down the fast line cable and struck the fast line ball's wedge socket, causing the fast line wire rope to fail at the socket entry. The fast line ball and detached weight fell approximately 12 feet to the vessel deck.

A diver working nearby saw the falling components and attempted to move away from the hazard. As the diver turned away, the recoiling wire rope struck the diver on the right side of their torso. Operations were immediately halted, and personnel secured the area. The diver sustained minor injuries and did not seek medical attention.

Findings:

The bureau's investigation determined that the fast line wire rope failed because of internal corrosion at the wedge socket. The corrosion developed after the annually required cut and- -slip maintenance was not performed in accordance with company policy. Investigators also found that a bent bolt caused the A2B cable to run off track and abrade, allowing the A2B weight to detach and fall.

The impact of the falling weight on the wedge socket generated a sudden, high intensity- force that exceeded the remaining strength of the weakened wire rope, causing it to part. Inadequate inspections contributed to the incident because they did not identify the bent pulley bolt, misaligned pulley, abnormal cable wear, or the deteriorated A2B wire rope before the incident.

Therefore, the Bureau of Safety and Environmental Enforcement recommends that operators and their contractors, where appropriate, consider the following:

- Ensure personnel follow API RP 2D required "cut, slip, and inspect" procedure for all wire rope terminations, especially those exposed to saltwater intrusion, so that internal corrosion and strand deterioration may be detected and corrected before rope failure.
- Conduct pre-use and periodic crane inspections to verify proper A2B pulley alignment, bolt integrity, and unrestricted sheave rotation. Remove cranes from service when inspections identify chafing, binding, or misalignment or other unsafe conditions.
- Consider increasing inspection frequency and shortening wire rope replacement intervals for cranes operating in corrosive marine environments, consistent with API RP 2D guidance on corrosion, abrasion, and wire rope retirement criteria.
- Ensure certified crane mechanics, inspectors, and operators are trained and competent per API RP 2D requirements and company policies. Refresher training should emphasize how to identify internal corrosion, mechanical wear, and A2B system vulnerability.

– 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: Cranes/Lifting, Personnel Safety