



SAFETY ALERT

E & P (Offshore)

Ref no : OISD/SA/2020-21/E&P/01
Title : Water Ingress during Rig Movement of Jack-up Rig
Location : Offshore
Activity Type : Movement of MODU from the location
Result Outcome : Major crisis during Rig Movement

INCIDENT

Jack-up Rig was on voyage to another location. During the rig move, water ingress was observed in two ballast tanks and one preload tank. The jacking system of all the three legs were also found to be not working. This created an emergency situation and help from support vessels were mobilized for emergency evacuation.

OBSERVATIONS

While under tow, water ingress was observed in Barite Room and on further investigation the water was found to be overflowing through the manhole of Ballast Tank. It was also observed that another Ballast Tank below drilling store was also flooded and overflowing through manhole. Thus two Ballast Tanks were breached. Later it was found that there was breach in preload tank also and the rig listed to port with draft increasing to 16 ft. Once the severe water ingress was observed, immediate action was taken to bilge out water using bilge pumps and bilging system. Since the rate of water ingress was found more than the rate of bilging (pumping out), it was decided to lower the Forward and Starboard legs [as port leg panel was flooded, so operation of the leg was not possible] and pin the rig for safety. However, the jacking system was found non-operational. So, all nearby installations and office were alerted about the situation and requested for mobilization of portable bilge pumps to pump out water as efforts to control water ingress was found futile. Two Diving Support Vessels (DSV) and one Fire Fighting Support Vessel (FFSV) were mobilized for rendering immediate assistance. In the meantime, additional bilge pumps were mobilized from nearby rigs and installations. Simultaneously an evacuation plan was formulated, where the DSVs and FFSV mentioned above would render assistance in evacuation and accommodate evacuees if required.

About 6-7 pumps of varying capacities were deployed and with these pumps in operation, the rate of increase of flooding was arrested. Cleaning of deck and the jacking panel were done and the rig was towed to a shallower area. Forward &

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Starboard jacking system were made operational and the rig was taken to the desired emergency location and the Forward & Starboard legs were engaged to bottom, thereby arresting the movement as well as bringing some stability. After some time, the Port leg jacking system was also made operational. And the rig jacked up to 5 feet air gap.

ROOT CAUSE

- Water Tight Integrity checks not carried out at floating draft and prior to releasing legs for moving off-location.
- Bottom Plugs of Ballast tanks were either not inserted or not closed properly.
- Manholes of the preload tanks were not properly secured and the gaskets were found torn out, not fit for use.
- Continuous/ regular Water Tight Integrity checks were reportedly not carried out while afloat.
- The Sounding Gauges of Ballast Tanks were not working or it was not monitored regularly.
- Tank level was not monitored either on the Sounding Gauges in the Control Room or by taking manual sounding at regular interval during tow.

RECOMMENDATIONS

- Rig move activities as mentioned in the Rig Move Procedures and Operations Manual shall be strictly adhered to.
- Rig Move Log Book shall be maintained and all events after releasing the rig from the location.
- Carrying out Water Tight Integrity checks at floating draft prior to releasing legs for moving off location.
- Closing the manholes of the preload tanks properly. Keeping them bolted and using the manual soundings for Water Tight Integrity checks. Ensure that gaskets are in good condition
- Undertaking continuous/ regular Water Tight Integrity checks while afloat
- Continuous monitoring of tank soundings on the Barge Instrumentation system.
- Closing Bottom Plugs and Dump Valves of tanks properly
- Only Manual soundings tubes shall be used for WTI checks
- Regular inspection and maintenance of jacking system shall be undertaken.
- Manpower onboard during rig move shall be kept bare minimum.