PROJECT REVIEW

SEMAC 1—Semi-Submersible Pipe Laying Barge

Cathedral Gantry Crane Upgrade

The Saipem pipe laying barge, SEMAC-1, experienced excessive vibration and noise in the accommodation block. A vibration assessment suggested this was largely due to the use of the gantry crane during pipe handling operations. The gantry crane had welded connections directly to the underside of the accommodation block.

Remazel Engineering on behalf of Saipem, commissioned Orwell Offshore to design the upgrade of the gantry crane to reduce vibration transfer during crane operation. The key upgrade was to introduce Anti-Vibration Mountings between the crane and accommodation block to dampen the vibration effect.

Various modifications to the cathedral superstructure were required, including gantry support steelwork and the lowering of existing crane docking structures. The upgrade also saw the introduction of new high-level walkways throughout the cathedral area to improve maintenance access. A detailed Finite Element Analysis of the cathedral area and the crane support structure confirmed the integrity of the upgrade.

Orwell delivered a successful upgrade of the gantry crane and cathedral area, all in compliance with Class requirements. Following commissioning of the gantry crane, it was reported that the modifications made had successfully reduced both noise and vibration levels.

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