Crane Overhaul by ERIKS - Full Inspection, Repair and Test

Industry Sector:
Infrastructure

Application:
200 tonne loading cranes

Ref PS218

Problem

The turnaround time for loading containers from the hold of a ship onto transport links is short, therefore must be kept to an absolute minimum - making performance and reliability of equipment crucial. ERIKS put their signature 'know-how' to the test when they were called out to the Dartford River Crossing to investigate why two 200 tonne cranes were regularly breaking down. The race was on to identify and rectify the problem, with a time slot of 28 days.

Solution

Each crane had a driver's cab situated at the front, posing an access issue to the plant room and the motors and generators. The decision was made to cut the roof of each plant room and apply additional carnage to lift out the hoist motors, swivel motors and generators.

The five motors (ranging from 35hp/kw to 365hp/kw) and the (80kw) generator were taken to a nearby ERIKS branch where a full investigation was undertaken. It was evidently clear that the cranes had not been overhauled prior to being hired out, and a lack of preventative maintenance meant that carbon build up was reducing motor performance.

The carbon build-up had led to commutator burning and carbon contamination of stators and rotors. Having been dismantled, all windings and components were put through a steam cleaning process, dried, electronically tested, re-insulated and impregnated with varnish. As part of the repair work, the commutators were skimmed and undercut between segment mitres, and new bearings were fitted.

Following reassembly, each motor underwent stringent testing, including dynamic balancing. Once the motors and generators were re-installed, the roof of each crane plant room was welded back on, and vibration analysis was undertaken. All-in-all, the contract – removal to re-installation – took only 14 days, that's half the allocated time

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