

CASE STUDY

RWE Generation – Provision of Maintenance Services at The Royal Portbury Dock, Bristol



OVERVIEW

The bulk terminal at Royal Portbury Dock (RPD) handles vessels up to 130,000 dwt discharging coal and animal feeds and loading grain. RPD has the largest sea lock in the UK with dimensions of 42.7m beam x 365.7m length x 14.5m arrival draft. There are 2 x 300m berths with four discharge units with a discharge rate of 25,000 mt / 24 hrs. In addition, there is a grain loader capable of loading panamax sized vessels. Linked to the berth by the conveyor is a coal stockyard with a 750,000 mt capacity, two animal feed and grain warehouses with a 200,000 mt capacity and grain silos with a capacity of 15,000 mt. The bulk stockyard is rail connected for delivery of coal to the end user.

AIMS AND OBJECTIVES

- To carry out full maintenance (predictive, preventative and reactive) of the equipment associated with the bulk handling terminal in accordance with the manufacturers recommendations and to ensure plant availability does not cause any loss / delays to ship unloading or train deliveries.
- The provision of a 365 days per year / 24 hours per day service.
- Responsible for the maintenance of good housekeeping and safe access associated with maintenance and repair activities



WHAT WE DID

Hargreaves were fully responsible for providing all labour, equipment and materials to carry out all work to the satisfaction of RWE. This included the provision of all necessary consumables to carry out the lubrication schedule (or other maintenance included in the manual – e.g. filters). Vibration analysis condition monitoring system was utilised for the conveyors, machines and associated bearings and Hargreaves were responsible for collecting data from this system and the repairs as necessary. Hargreaves were responsible for chute lining repairs and conveyor belt renewals, repairs and replacements (free issue conveyor belting material). All conveyor joints were vulcanised (clip joints are not acceptable). Hargreaves identified several areas where improvements could be made to the plant which not only improved the operational performance of the plant, but also reduced the level of maintenance required. For example;

OUTCOMES

Stacker / Reclaimer Boom Drive Modifications

Replace two of the boom gearboxes with a new uprated design which sits within the same footprint as the existing unit but with an output shaft and coupling to connect to a head drum shaft along with two spare gearboxes for each handling.

Silo 1-2 Accumulator Pipework

Replace with flexible fittings that are easier to handle. Significant time savings could be achieved on these works for the future.

C5 Conveyor TS3 end

Explore options into alternative mechanical coupling that will enable to the drive to be engaged/disengaged via a quick release system removing the requirement to remove all the coupling bolts.

Elevator belt head chute

Redesign the chute to allow scope for more efficient scrapers to be fitted to the system.