Case Study

Upgrade of turbine intake damper controllers on SS Cape Isabel

Industry: Marine
Client: US Military Sealift Command.
Product: Type K, K-TORK

Summary

The SS Cape Isabel was launched in 1976, since then some of the equipment on-board had become obsolete. Rotork installed Type K damper drives in order to upgrade the old actuators which were already on board the ship in order for them to meet the higher specifications of the modern day.

Overview

SS Cape Isabel is a 655 ft, 15,000 tonne roll on/roll off cargo ship based at Long Beach and operated by the US Military Sealift Command. Launched in 1976, the ship is powered by two steam turbines

Challenge

The ship's two turbine intake radial vane dampers were equipped with pneumatic controllers (actuators) which were now obsolete. The old actuators did not respond quickly and accurately to signals from the control system, resulting in potentially inefficient combustion and undesirable emissions.

Replacing the actuators was necessary to increase efficiency, reduce maintenance and associated costs that could result from unplanned shutdowns.

Solution

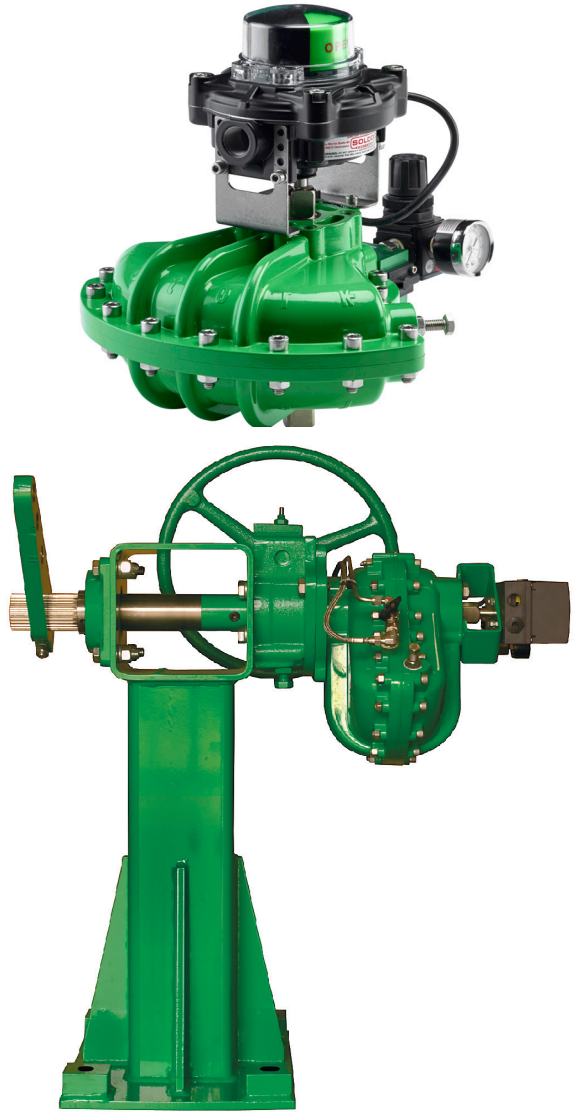
The equipment selected to upgrade the old actuators was Rotork Type K damper drives, which provide a direct 'drop-in-place' replacement that exactly matches the existing damper drive footprint and output shaft location. Duplication of the existing drive's dimensions simplifies the installation, enabling the upgrade to be swiftly completed in a matter of hours.

Type K damper drives incorporate vane type actuators that offer high speed full stroke capabilities of less than 5 seconds, combined with accurate and responsive positioning. The rugged construction is designed to withstand the harsh environments associated with power stations and combustion plants.

Once the two Type K pedestal mounted damper drive units had been delivered to the ship, installation of both units was performed by Rotork engineers within three days. All the work was co-ordinated prior to commencement by the ship's Chief and First Engineers.

The installation was completed in only three days. After bringing aboard the transport shipping crates and ensuring that the new Type K units had been brought to the appropriate locations, Rotork engineers isolated the pneumatic supply and analogue signal so that the damper drives could be correctly installed. Once they were all in place, the older models were removed and the ship's First Engineer was briefed on operating the machines, as they now had both an "Auto" and "Manual" operating function, which was not the case prior to the addition of the Type K units.

Installed Type K damper drive unit.



Type K damper drive and K-TORK actuator.

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PUB000-161-00 Issue 11/13