

Actuator and HPU Replacement

Recirculating Flow Control (RFC)

**CURTISS -
WRIGHT**

Nuclear Power Products and Services



PLANT TYPE

Nuclear Power Plant (BWR)

LOCATION

Asia

CHALLENGE

Component obsolescence at the BWR plant led to ongoing challenges maintaining a crucial hydraulic system. Updating the complete assembly required matching existing interface and performance characteristics.

SOLUTION

Curtiss-Wright designed and manufactured complete actuator and Hydraulic Power Unit (HPU) assemblies using field measurements and available technical documentation.

Background

The Recirculating Feedwater Control (RFC) system, used with the General Electric jet pump recirculation system, is found in all GE-manufactured boiling water reactors from the early 1980s. The original actuator systems were designed by Greer Hydraulics, which ceased operations in the 1990s, leaving no single supply source of spare parts. Over time, many critical sub-components were discontinued, technical records were lost, and suppliers left the industry.

Operators now struggle to replace parts that are either unsupported, prohibitively expensive, or available only via custom production runs with excessive lead times. This growing obsolescence problem has impacted the reliability and sustainability of this critical plant equipment.

Challenge

This BWR plant in Asia, and other plants depending on RFC systems are confronted with shrinking supply chains, escalating costs, and extended procurement delays. Maintaining safe and reliable operation has become increasingly difficult and created long-term risk and uncertainty.

Solution

Curtiss-Wright has developed a completely upgraded replacement package for both the RFC actuator assemblies and the associated Hydraulic Power Units (HPU) which operate the actuators. The new equipment is engineered as near-identical drop-in replacements, ensuring seamless integration with existing plant infrastructure and avoiding costly rework.

This project included a detailed review of original design requirements, redesigning existing components with readily available modern alternatives, and manufacturing under strict quality standards. The complete assemblies were tested and accepted prior to shipment and later commissioned on site with Curtiss-Wright providing oversight, training, and documentation.

With updated, fully documented replacements now in place, operators have eliminated obsolescence risks, reduced lifecycle cost and secured long-term reliability and maintainability of their RFC systems.

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