

# Reactor Coolant Pumps

## Background

Westinghouse has designed, manufactured and repaired hundreds of reactor coolant pumps (RCPs) for the global market, allowing Westinghouse to amass extensive experience and expertise in providing dependable RCPs, for the continued success of its customers. As an original equipment manufacturer (OEM), Westinghouse maintains and has ready access to the original as-built records, which provide the resources to:

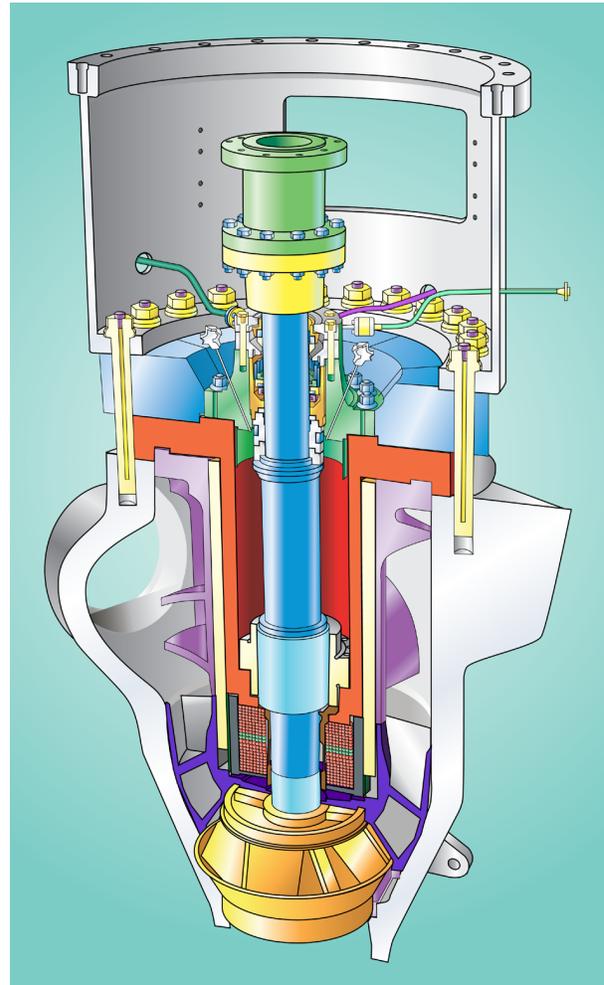
- Keep RCPs running in peak condition
- Reduce maintenance costs and improve plant reliability
- Increase the on-time delivery of parts, products and services
- Provide affordable, reliable and quality service

## Description

Westinghouse has provided pumps and/or pump-related services for nuclear power plants around the world. These services include:

### Engineering support

- Startup/operation
- Seal leak rate assessment
- Vibration analysis
- Hydraulic performance analysis
- ASME Code design analysis
- Root cause analysis
- Uprating analysis
  - Essential service water (ESW)
  - Containment spray (CS)
  - Containment fan (CF)
  - Component cooling (CC)
  - Auxiliary feed water (AFW)



Westinghouse RCP

### Field services

- Diagnostic
- Pump changeout
- Upgrade installations
- Seal services

## Shop services

- Contaminated pump internals refurbishment, including chemical decontamination
- Shielded DOT 7A shipping container
- Dynamic balancing
- Upgraded hardware

## Replacements and Upgrades

- Complete internals assemblies
- Hydraulic nuts and studs
- Shaft assemblies
- Complete rotating assemblies with performance test
- Cartridge seal conversions
- Flow testing
- Turning vane
- Shaft thermal sleeve
- Upgraded fasteners
- Cobalt-free hardfacing for bearing journal and backseat

## Human Performance

Westinghouse conducts lessons learned for each project and applies this knowledge to future projects. The Corrective Actions Process (CAPs) is used to identify and address issues related to quality and performance.

### Safety

Safety is important to Westinghouse and its subsidiaries. Westinghouse conducts extensive safety training for all employees and evaluates Occupational Safety and Health Administration (OSHA) reportable items on a weekly basis.

## Benefits

Because of its unique position in the industry, Westinghouse can provide the following:

- OEM design and field engineering expertise for evaluating anomalies, inspection results and performing upgrades for increased reliability of the equipment
- Special tooling designs that can greatly minimize dose, schedule, reliance on operation activities and system drain-down conditions
- Integrative features for all aspects of RCP services, including field services, hot shop, factory services and spare parts
- Continually updated training programs for Westinghouse and utility personnel
- Constant investment in customer-driven technology and development programs, resulting in outage optimization, reduced utility operations and maintenance (O&M) costs and improved reliability

## Experience

With comprehensive RCP and motor field services, Westinghouse has helped utilities meet the operating demands of today and be better equipped to meet the challenges of tomorrow.