

## RV Closure Head Ductwork Optimization

### Background

Reactor Vessel Closure Head (RVCH) disassembly and reassembly activities are major considerations when it comes to a refueling outage's critical path schedule, personnel radiation exposure, critical containment resources, foreign material exclusion (FME) control, personnel safety and cost. Ductwork associated with the cooling of the control rod/element drive mechanisms has to be disassembled every outage and then reassembled again prior to start up. To help our customers improve this process, Westinghouse offers a solution that reduces outage duration, polar crane dependency, personnel risk, dose and overall man-hours.

### Description

Westinghouse can modify or replace the control rod/element drive mechanism cooling ductwork with a configuration that can reduce the number of ductwork polar crane picks, ductwork sections and time spent at ductwork joint connections.

Large sections of ductwork can be permanently assembled with quick disconnect fittings on each end that are designed for ease of installation, have permanent rigging, and contain no nuts and bolts that need removed on a recurring basis.

### Benefits

These modifications help to:

- Reduce critical path outage duration
- Reduce personnel dose
- Decrease risks to personnel safety (eliminate use of man basket)
- Reduce demand on critical outage resources (polar crane, labor and containment laydown space)
- Reduce risk of Foreign Material (FME)

### Experience

Westinghouse has redesigned CRDM cooling ductwork at over 20 US and international units. A recent project experienced an 11 hour critical path savings due to the ductwork modification.



*Quick Disconnect Ductwork Connection*



*Ductwork Installation*

### Deliverables

Westinghouse works closely with our customers to determine the level of support needed.

#### Engineering deliverables:

- Design specification
- New ductwork drawings
- Additional design drawings dependent on project scope
- Ductwork/supports structural analysis
- New hardware

#### Additional services:

- Installation procedure
- Installation services
- Licensing assistance (50.59 Screens)
- Plant document change package (DCP)



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September 2018 / NS-ES-0300

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