

Integrated Head Assembly

Challenge

Removal of the Reactor Vessel Head from the reactor vessel during a refuel outage involves removal of many components above the head first. This increases personnel dose, potential for safety incidents and outage duration.

Solution

Framatome's Integrated Head Assembly (IHA) replaces existing components above the reactor vessel closure head and enables the entire component to be removed during a refueling outage in fewer steps. The focus of the IHA is to extend the life of our customers' plants with safe, reliable, innovative and efficient methods. Proven in the industry time and time again to improve safety, reduce duration of refueling outages, and lower personnel dose, this is one system enhancement you don't want to overlook. The IHA, fabricated and installed by Framatome, is customized to serve the unique requirements of each and every plant in the U.S. and internationally — Combustion Engineering (CE), Westinghouse and B&W designs. Invest in your future with a simple yet innovative upgrade to your service structure with Framatome's IHA.

Customer benefits

- Reduction of up to six critical path outage days
- Design addresses main barriers to reduced outage schedules
- Dose reduction of three to four person REM per outage
- Framatome's IHA design achieves the lowest personnel exposure in the industry for a Reactor Vessel Closure Head (RVCH) replacement
- IHA installation performed within a normal refueling outage schedule
- Safety design reduces potential for personnel injury & promotes zero OSHA recordables



Your performance
is **our** everyday **commitment**

Features

- New Integrated Missile Shield
- Head Lifting Frame
- IHA Seismic Support System
- CRDM Cooling System
- Head Area Cable System
- Cable Bridges
- Reactor Head Vent-Piping
- Shielding and Work Access

Highlights

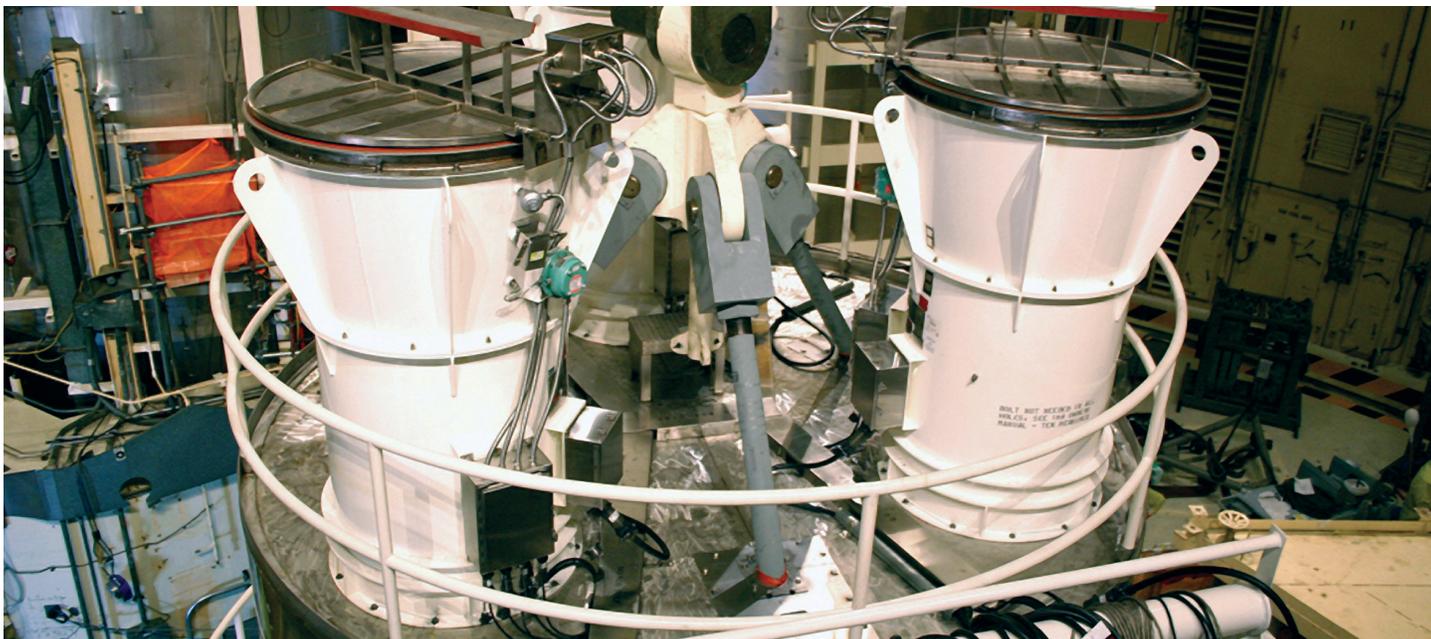
- Integrated missile shield
- Improvements to head vent routing & connections
- Integrated shielded work platform
- Integrated fans & ductwork
- Improvements to CCW line connections
- Integrated shielding around lower shroud
- Removable RVCH penetration inspection ports in insulation package

Why is the IHA so important for the success of your plant?

Our customers can safely and efficiently improve performance and reduce outage durations by installing Framatome's IHA. A typical IHA can reduce polar crane use by a factor of ten. In fact, we had a world record replacement outage at Salem in 2005. Our IHA has also received a Top Industry Practice award. The design replaces the existing components above the RVCH to enable the entire RVCH to be removed during a refueling outage in far fewer steps than the current design requires. It reduces critical path time, maintenance costs and manpower by combining the RVCH and the majority of its supporting systems into a single removable unit.

Our customers have captured reductions of up to six critical path days — thus, critical outage resources can be made available to potentially decrease total outage duration even further. Easy installation features and 360° inspection access to Control Rod Drive Mechanism (CRDM) penetrations enable you to compress outage schedules and get your plant reconnected to the grid in a shorter period of time.

Customized Service Structure Solutions that Save Valuable Outage Time



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