U.S.NRC

United States Nuclear Regulatory Commission

Protecting People and the Environment

Alloy 690/52/152 in New Reactors

Industry/NRC Alloy 690/52/152 Meeting
Rockville, Md
August 6-7, 2009

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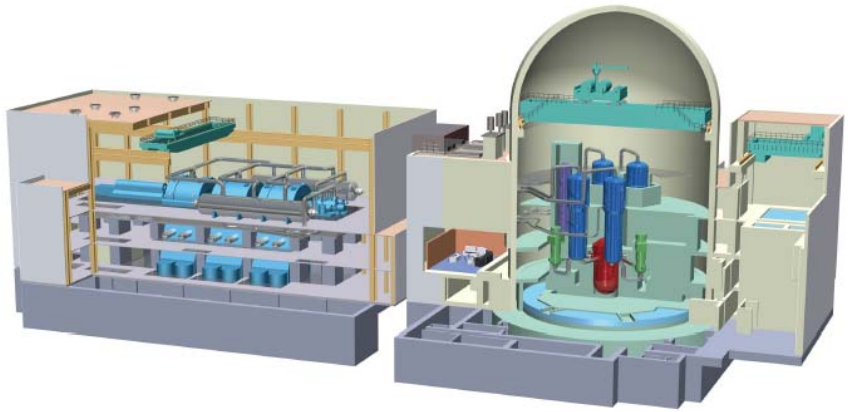
PWR Designs

- AP1000
  - COLs
    - Bellefonte 3 & 4, Harris 2 & 3, Lee 1 & 2, Levy County 1 & 2, Summer 2 & 3, Turkey Point 6 & 7, Vogtle 3 & 4
- EPR
  - COLs
    - Calvert Cliffs 3, Bell Bend, Callaway, Nine Mile Point 3
- US-APWR
  - COL
    - Comanche Peak 3 & 4



Primarily used in…

- A690
  - CRDM nozzles
- Alloy 52/52M/152
  - RPV (Vessel Head to CRDM) Low Alloy Steel (LAS) to Alloy 690
  - RPV (Safe End Welds) LAS to SST
  - Steam Generator (Safe End Welds) LAS to SST
  - Pressurizer (Safe end Welds) LAS to SST
  - Pressurizer (Heater Sleeves) LAS to SST

Topics of Concern for New Reactors

- In-process welding
  - Interpass cleaning
  - Start/stop cleaning
  - Defect removal
  - In-process informational inspections
- Ductility Dip Cracking & Other Welding Defects
- Experiences of Hot Cracking of Alloy 52

NRO Activities

- ASME Code Committee Participation
  - Section III, IX and XI
- Sub-Group on New Reactor Issues
- ASME Welding Best Practices Committee
- Expert Panel Meetings on Nickel Development & Welding Alloys
- EPRI Sponsored Welding Conferences
- Vendor Inspections

- Continue NRO/RES/NRR interactions to ensure technical consistency