




*AREVA Perspectives on the Containment
Sump Design and Downstream Effects for
U.S. EPR™ Design*



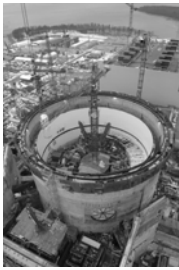
Fariba Gartland
Project Manager
AREVA NP Inc.

NRC Regulatory Information Conference
Rockville, MD
March 12, 2009

AREVA NP Inc. > NRC Regulatory Information Conference March 12, 2009 EPR is a trademark of the AREVA Group. 2

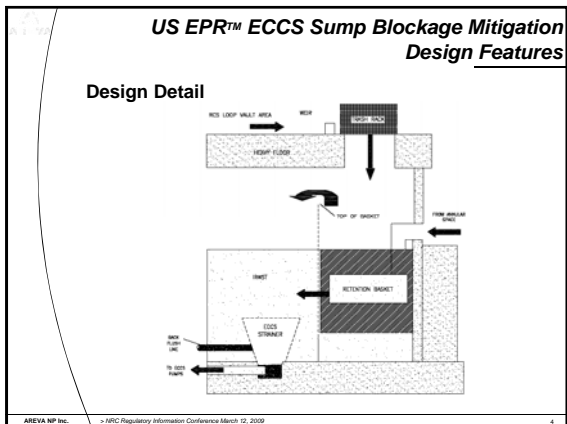
Introduction

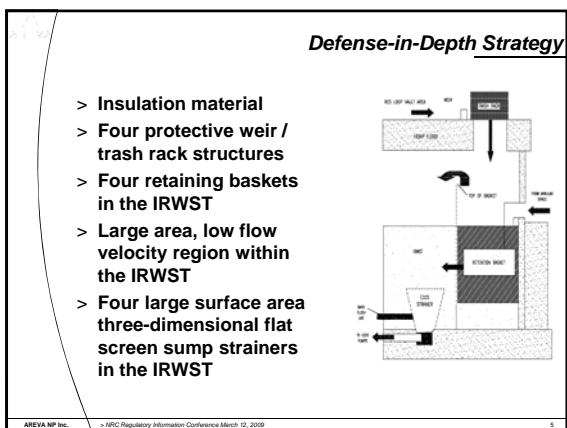
- > Innovative and comprehensive solution to the concerns of GSI-191
- > Defense-in-depth strategy
- > Supporting test program
- > Inspections, tests, analyses and acceptance criteria (ITAAC)

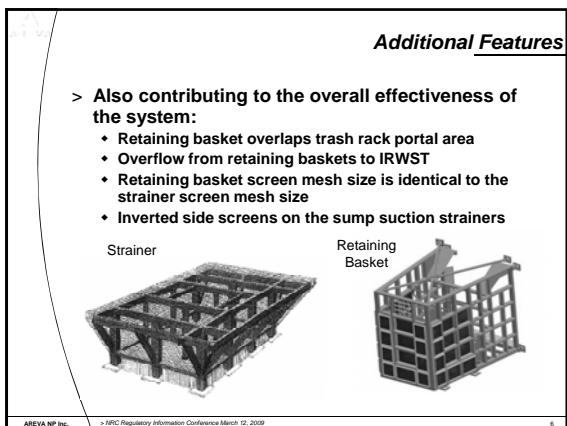


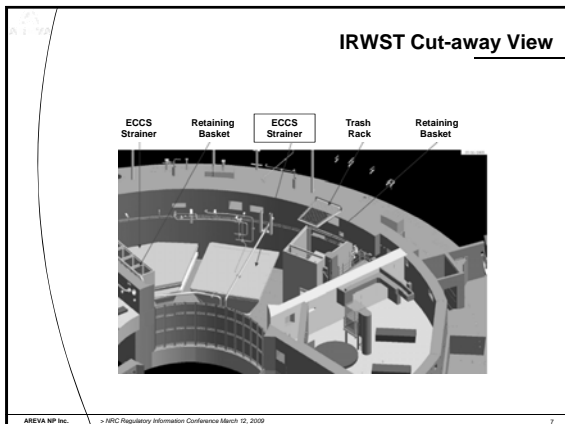
Olkiluoto-3 EPR Project, Finland
January 2009

AREVA NP Inc. > NRC Regulatory Information Conference March 12, 2009 3









Testing

> **ECCS Strainer Testing**

- Test facility
 - Scaling: 1:1 vertical and 1:20 for all other parameters (horizontal, flow rate, screen size, debris amount)
- Test results
 - Three-tiered design very effective
 - Retaining baskets retained 95% of total debris

ECCS strainer testing demonstrates effectiveness of three-tiered design

AREVA NP Inc. > NRC Regulatory Information Conference March 12, 2009 8

Downstream Effects

> **Potential blockage minimized by:**

- The retaining basket and sump strainer screens are the same mesh size, 0.08 x 0.08 inches
- High debris retention in the baskets (95%)

> **Fuel:**

- U.S. EPR design uses very little fibrous insulation
- Evaluations of fuel under expected debris load will be completed according to current industry standards

> **Components:**

- Downstream components (e.g., ECCS pumps) will be specified to accommodate expected debris load

Debris types and design features minimize potential for blockage

AREVA NP Inc. > NRC Regulatory Information Conference March 12, 2009 9

ITAAC

> **Pre-operational inspections on key design features affecting sump screen performance:**

- Trash racks over floor openings
- Weir at floor and wall openings
- Retaining baskets below floor openings
- IRWST suction strainer

ITAAC provide confirmation that installation of key components meets the design bases

AREVA NP Inc. > NRC Regulatory Information Conference March 12, 2009 10

Conclusion

> **The potential debris source term is minimized.**

> **The U.S. EPR sump design has advanced and redundant features with respect to post-accident debris accumulation and ECCS recirculation sump strainer blockage.**

GSI-191 concerns addressed through defense-in-depth strategy

AREVA NP Inc. > NRC Regulatory Information Conference March 12, 2009 11
