



LO-0320-69219

Enclosure:

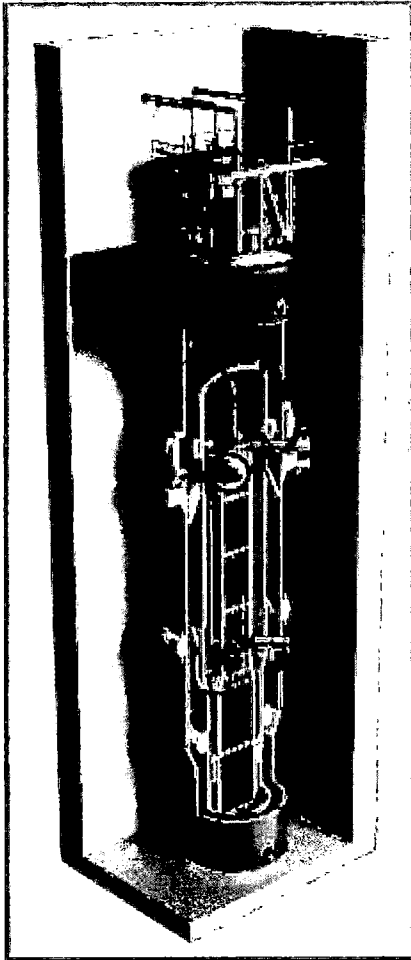
"Public Meeting Presentation: Topic – Emergency Core Cooling System Boron (ECCS) Distribution,"
PM-0320-69218, Revision 0

Public Meeting Presentation

Topic

Emergency Core Cooling System (ECCS) Boron Distribution

March 9, 2020



Presenters

Ben Bristol

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Agenda

- Boron Transport – Background and Discussion
- Boron Transport – Update and Resolution
- Conclusion

ECCS Boron Transport – Background

NuScale Response to RAI 8930 (ML19332A120) supports our priority to develop a safe and passive design

- FSAR 15.0.6.1 describes analyses which evaluate the transport of boron to the core under postulated Chapter 15 events.
- Concludes that boron will concentrate in the core region, and that the 15.0.6 evaluation provides a bounding analysis.
- Supports NRC Staff safety evaluation discussion that:
 - “core reactivity would not be adversely affected by boron redistribution to places outside the core, and therefore, would not return to power”
 - Section 15.0.6.4.4 of the Chapter 15 Safety Evaluation Report (ML20027A108)

ECCS Boron Transport – Discussion

Discussion for expanding the ECCS boron transport analysis:

- As boron accumulates in the core/riser region, boron concentration in the downcomer and in containment decreases as steam is condensed and lower concentration water is recirculated in to the reactor vessel
 - Boron precipitation analysis performed as part of ECCS long term cooling analysis
- Boron dilution analysis was performed to:
 - Evaluate potential for lower boron concentration fluid in core or near core inlet
 - Demonstrate that core region boron concentration remains above the initial concentration
 - Confirm the basis for the response to RAI 8930

Boron transport governed by:

- boiling in the core
- condensation in the containment vessel

ECCS Boron Transport – Update/Resolution

Update:

In preparation for Ch. 15 ACRS subcommittee meeting NuScale determined under certain conditions, ECCS actuated later than expected and resulted in higher containment water level accumulation than is considered in RAI 8930 response basis.

Resolution:

Lowering the containment high water level set point actuates ECCS earlier to reduce the initial containment water accumulation and maintain the RAI 8930 response basis.

ECCS Boron Transport – Conclusions

- NuScale is highly committed to plant safety, and to providing a safe and passive design
- In supporting this commitment, NuScale's position is that this design change is appropriate to resolve as part of finalizing the DCA
- This change confirms the boron distribution analyses provided in FSAR 15.0.6.1, and maintains 15.0.6 as the bounding analysis for the NuScale design

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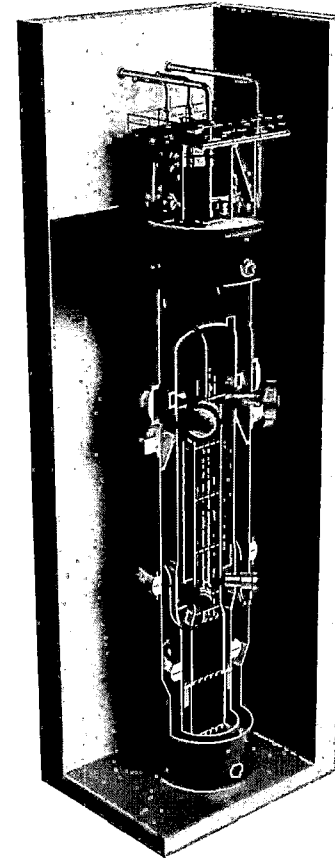
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