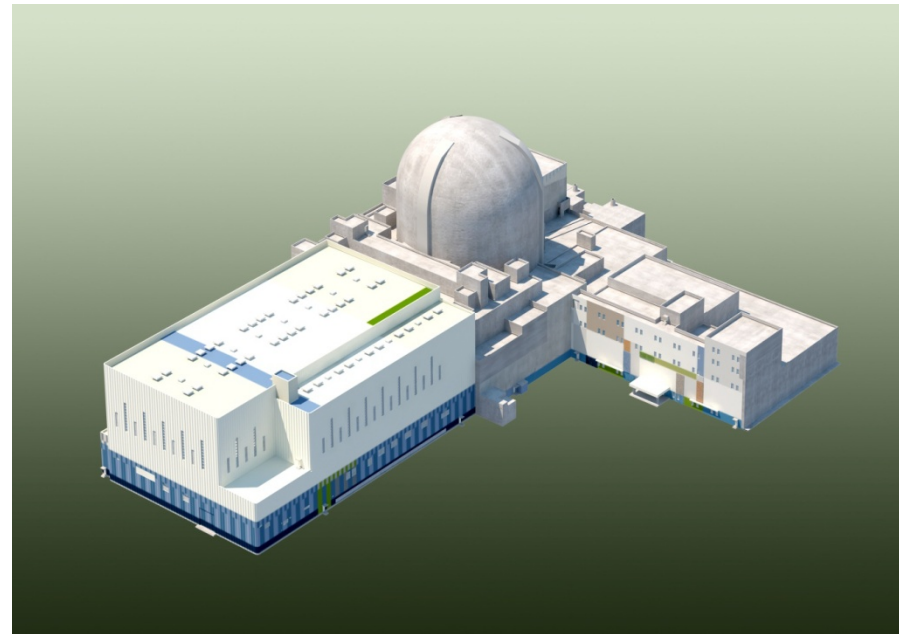


NON-PROPRIETARY

Long-term Core Cooling with Deep Loop Seal Design



KEPCO/KHNP
APRIL 28, 2015

Public Meeting

Meeting Topic

- **Topic**

- ✓ Demonstration of the capability of the APR1400 design with a deep loop seal to maintain core cooling before and after the potential loop seal clearing and to keep peak cladding temperature within acceptable limits

- **Relevant Regulations**

- ✓ 10 CFR Part 50 Appendix A, GDC 35, “Emergency Core Cooling”, mandates the requirements for ECCS that need to be satisfied by conforming to the ECCS acceptance criteria for light-water reactors given in 10 CFR 50.46, “Acceptance Criteria for Emergency Core Cooling Systems for Light-water Nuclear Power Reactors.”
 - 10 CFR50.46(b)(1): peak cladding temperature requirement
 - 10 CFR40.46(b)(5): long-term core cooling requirement

Submitted Documents

- **DCD Section 15.6.5 “Loss-of-Coolant-Accidents Resulting from the Spectrum of Postulated Piping Breaks within the Reactor Coolant Pressure Boundary”**
 - **Technical Report APR1400-F-A-NR-14001-P, “Small Break LOCA Evaluation Model”**
 - **Technical Report APR1400-F-A-NR-14003-P, “Post-LOCA Long Term Cooling Evaluation Model**
- ❖ **Above documents describe long-term cooling with deep loop seal at a high level.**

Resolution Status of the Topic

- **KHNP understands the NRC's concern on deep loop seal design.**
- **KHNP is performing a qualitative evaluation to demonstrate that the APR1400 design with a deep loop seal is capable of maintaining long-term core cooling; This evaluation is expected to be completed in June.**
- **Based on the qualitative evaluation, KHNP will decide on the need for a quantitative analysis.**

Thank you for your attention.