Nuclear Regulatory Commission
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U.S.NRC
UNITED STATES NUCLEAR REGULATORY COMMISSION
Protecting People and the Environment

Vogtle ESP Mandatory Hearing

March 23-25, 2009

NRC Staff Presentation Topic #11

AP1000 Design

Certification Revisions

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Presenter:
(Safety Review)

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ESP/LWA Site Safety Analysis Report

- The Site Safety Analysis Report (SSAR) Revision 0 in the Vogtle Electric Generating Plant (VEGP) Early Site Permit (ESP) application submitted on August 14, 2006 by Southern Nuclear Operating Company (SNC) was based on Revision 15 of the AP1000 Design Certification Document (DCD).
- All subsequent revisions to the VEGP SSAR were based on Revision 15 of the AP1000 DCD.
- The Limited Work Authorization (LWA) Request SAR submitted August 15, 2007, by SNC was also based on Revision 15 of the AP1000 DCD.
- The Final Safety Evaluation Report for the ESP and the LWA at the VEGP Site is based on Revision 15 of the DCD.

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ESP Safety Review

- For the safety review of an ESP application, the staff relies on a limited set of design parameters to make its safety findings.
- Where a design parameter is necessary in the development of a site characteristic, it is defined as a bounding parameter and included in Appendix A to the FSER. The bounding parameters in Appendix A to the FSER are proposed by the staff to be included in an ESP.
  - Plant Grade
  - Accident Source Term
- Similar to site characteristics, an applicant must demonstrate that the design chosen at the combined license stage fits within the bounding parameters included in an ESP.
- Granting of an ESP that references a certified design does not indicate NRC approval of the site for that specific design.

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LWA Safety Review

- An applicant must submit a description of the activities being requested under an LWA, in addition to the pertinent design and construction information related to those activities.
- Since design information is required in an LWA to support the requested activities, an applicant must either incorporate by reference a certified design or furnish design details for review under an LWA.
- Granting of an LWA by the NRC approves the requested activities under an LWA as well as the design and construction information that were within the scope of the LWA activities.
- For the Vogtle LWA request, SNC incorporated by reference the applicable portions of the AP1000 certified design (Revision 15).

Impacts from AP1000 Design Certification Revisions 16 and 17

ESP:

- The staff is aware that the accident source term proposed in Revision 16 of the AP1000 DCD has changed from that of the AP1000 certified design (Revision 15).
- Because the applicant referenced Revision 15 to the AP1000 DCD, changes in design occurring in Revisions 16 and 17 are not considered in the staff's safety review.
- Currently the staff is proposing to include the AP1000 Revision 15 accident source term as a set of bounding parameters in the ESP.
- Because of the differences in accident source term between Revision 15 and Revision 16 of the AP1000 DCD, a COL applicant referencing this ESP must demonstrate that the accident doses evaluated at the ESP are bounded by those of the chosen design.

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Impacts from AP1000 Design Certification Revisions 16 and 17

LWA:

- The basis for LWA approval will not be impacted unless there is a major change in footprint of the NI basemat.
- Moderate changes in structural design will not invalidate the basis for LWA approval.
- Any incompatibilities between the design information approved in an LWA and design information submitted in a COL application would need to be reviewed at the COL stage.
- Any activities undertaken under an LWA are undertaken entirely at the risk of the applicant, namely that the COL or CP may not be approved or that the design ultimately selected is incompatible with the LWA construction.

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Presenter:
(Environmental Review)

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Applicant's Environmental Report (ER)

- ER Rev. 0, submitted on August 14, 2006, was based on Rev. 15 of the AP1000 Design Certification Document (DCD).
- ER Rev. 1, submitted in November 2006, and ER Rev 2, submitted in April 2007, were likewise based on Rev. 15 of the AP1000 DCD.
- Subsequent revisions to the Plant Vogtle ESP application did not include revisions to the ER.
- The Final Environmental Impact Statement for an Early Site Permit at the Plant Vogtle Electric Generating Site (FEIS) is based on Rev. 15 of the AP1000 DCD.

AP1000 DCD Rev. 15 Design Parameters

- Plant and Facility Characteristics
- Fuel Characteristics
- Normal and Accidental Releases
- Plant Water Use
- Cooling System Characteristics

A listing of the AP1000 DCD Rev. 15 Design Parameters used in the development of the FEIS is located in Appendix I of the FEIS.

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Southern's Comments on the DEIS

- Southern submitted comments on the Draft EIS in a letter dated December 26, 2007.
- In a limited number of subject matter areas, comments contained new information that was based on design parameters contained in Rev. 16 of the AP1000 DCD.
- Staff responded to the comments in Appendix E of the FEIS and revised portions of the FEIS to provide additional analysis based on the new information.

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Staff Analysis of New Information from Southern

- Focused on information from Rev. 16 provided in SNC's comment letter that could potentially affect the Staff's analysis of impacts.

- Circulating water system usage, final effluent discharge, auxiliary boiler emissions, additional diesel generators, expected fuel irradiation level, and service water system usage.

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Staff's Assessment of New Information

- Where values directly depended on a design parameter, Staff analyzed how the Rev. 16 change would affect the impacts analyzed for Rev. 15.
- The Staff determined that the new information provided by Southern would not affect the impact conclusions stated in the FEIS.
- Changes in parameter values in the design ultimately selected for the COL application would be new and potentially significant information for Staff review at the COL stage.

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