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Oconee Flood Protection and the 10 CFR 50.54(f) Response

NRR ET Meeting

October 23, 2008

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Objectives

- Purposes
  - Summarize the licensee's responses
  - Discuss the staff's evaluation
  - Receive ET feedback on the merits of proposed key messages to the licensee

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Background

- NRC inspections in 1994 and 2005
  - Issues regarding Oconee external flooding licensing basis
- FERC-required inundation study (1992)
  - Site flood height as high as 16.8 feet
- Unclear demonstration of flood height for adequate protection
- Underestimated Jocassee Dam failure frequency
- 10 CFR 50.54(f) letter to Duke to address flooding concerns

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Principal 10 CFR 50.54(f) Questions Regarding Oconee Flood

1. Explain the bounding external flood hazard at Oconee and the basis for excluding consideration of other external flood hazards, such as those described in the Inundation Study, as the bounding case.
2. Provide your assessment of the Inundation Study and why it does or does not represent the expected flood height following a Jocassee Dam failure.
3. Describe in detail the nuclear safety implications of floods that render unavailable the SSF and associated support equipment with a concurrent loss of all Alternating Current power.

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Licensee's Response

- Written response
  - Assessed inundation levels based on current drought conditions
  - Committed to increase current flood walls by 2.5 feet by February 2009
  - Proposed further analysis by February 2010
  - Relied heavily on test and inspection of dam to support low frequency assumptions
  - Asserted that seismic failure is "not credible"
  - Asserted that other dam failure modes (i.e., overtopping) "not credible"
- Oral response
  - Stated that watertight doors could be procured for the SSF
  - Stated that SSF walls can accommodate the impact of a 16.8 foot flood

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Review of Licensee's Response

- Interim continued operation acceptable if:
  - Licensee commits to water management of Jocassee Lake levels
  - Licensee addresses SSF availability
- Insufficient basis for final resolution—current and future
  - Limited scope
    - Lack of adequate seismic analysis
    - Lack of a probable maximum precipitation (PMP) analysis
  - Inadequate dam failure modeling
    - Time of failure
    - Size of breach
    - Analysis model
  - Inadequate probabilistic argument

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Proposed Key Messages For November 5, 2008 Meeting with Licensee

- Interim continued operation acceptable if:
  - Licensee commits to water management of Jocassee Lake levels
  - Licensee addresses SSF availability
- Insufficient basis for final resolution—current and future
  - Limited scope
    - Lack of adequate seismic analysis
    - Lack of a probable maximum precipitation (PMP) analysis
  - Inadequate dam failure modeling
    - Time of failure
    - Size of breach
    - Analysis model
  - Inadequate probabilistic argument
- SSF improvements
  - Scope, timing, and commitment unclear
- Emphasis on timely resolution
- Letter conveying these concerns will be issued by November 21, 2008