



Nuclear Regulatory Commission
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Rejected:

Withdrawn:
Stricken:

SNCR00008



Vogtle 3 & 4 COL

Southern Nuclear Operating Company
VEGP Units 3 & 4
Combined Licenses and
Limited Work Authorization

Mandatory Hearing

Safety – Panel 3

September 27, 2011

Amy Aughtman – SNC
Don Moore – SNC
Wes Sparkman – SNC
Eddie Grant - NuStart

Selected Topics – Chapters 7, 8, 15, 19

- ◆ **Seismic Margin Analysis**
- ◆ **Other External Events**
- ◆ **Loss of Large Areas of the Plant due to Explosions or Fire (LOLA)**
- ◆ **Reactor Power Uncertainty Measurement**
- ◆ **DCD I&C Key Information IBR**
- ◆ **Offsite Power System**
- ◆ **Underground Cables**

Seismic Margin Analysis

- ◆ Standard Plant Seismic Margins Assessment
 - ◆ VEGP NI margins against sliding and overturning were demonstrated to be greater than the limiting margins calculated for the standard AP1000 design cases.
 - ◆ Concluded AP1000 Seismic Margin Assessment is applicable to VEGP
- ◆ Review Level Earthquake
 - ◆ Evaluated at 1.67 x the VEGP GMRS ($p_{ga} = 0.44g$)
 - ◆ The following soil-related failures were evaluated and screened out based on sufficient margins
 - ◆ Soil liquefaction
 - ◆ Soil bearing failure

Other External Events

- ◆ The following external events were evaluated
 - ◆ Tornado
 - ◆ Hurricane
 - ◆ External flooding
 - ◆ Transportation accidents
 - ◆ Storage facilities
 - ◆ External fires
 - ◆ Radiological hazards
- ◆ No site specific susceptibilities were identified
- ◆ Where standard plant analyses were provided, the standard plant analyses were shown to be applicable



LOLA

- ◆ Mitigative Strategies Description (MSD) and plans for implementation submitted per §52.80(d) – May 2009
- ◆ Based on template in NEI 06-12, Rev. 3
 - ◆ Phase 1 strategies leverage VEGP 1&2 response strategies under ICM Order Section B.5.b
 - ◆ Phase 2 SFP mitigating strategies based on guidance in NEI 06-12, Rev. 3
 - ◆ Phase 3 core and containment cooling and release mitigation strategies based on NEI 06-12, Rev. 3
- ◆ DC/COL-ISG-16 endorses NEI 06-12, Rev. 3 – June 2010
 - ◆ Provides additional guidance for meeting § 50.54(hh)(2)



LOLA (continued)

- ◆ Applicant responses provided additional details in response to NRC Staff's requests
 - ◆ Expand on details for implementing mitigative strategies
 - ◆ Address additional topics identified in DC/COL-ISG-16
 - ◆ Provide commitments to complete actions that cannot be accomplished until facility is near completion
- ◆ In general, AP1000 passive design and other design features facilitate LOLA mitigation strategies
- ◆ LOLA mitigation strategies are treated similar to Operational Programs and will be implemented and maintained per License Condition



Reactor Power Uncertainty Measurement

- ◆ Power calorimetric uncertainty of 1% evaluated in DCD
 - ◆ This evaluation incorporated by reference into COLA at FSAR Section 15.0
 - ◆ Section 15.0 – COL item 15.0-1 to verify instruments will provide the 1% uncertainty
- ◆ COLA addresses with commitment to provide appropriate instrumentation to meet the analysis assumptions
- ◆ COLA includes
 - ◆ Plant-specific ITAAC on instrumentation, analysis
 - ◆ License condition to identify schedules to NRC
 - ◆ Analysis documentation for verification
 - ◆ Procedures complete for verification



DCD I&C Key Information IBR

- ◆ Reactor Control
 - ◆ Fully addressed in the DCD Section 7.2
 - ◆ incorporated by reference into the COLA at FSAR Section 7.2
- ◆ Engineered Safety Feature Control
 - ◆ Fully addressed in the DCD Section 7.3
 - ◆ incorporated by reference into the COLA at FSAR Section 7.3
- ◆ Diverse Actuation
 - ◆ Fully addressed in the DCD Section 7.7
 - ◆ incorporated by reference into the COLA at FSAR Section 7.7



Electric Power

- ◆ Offsite power interface requirements identified in DCD
 - ◆ DCD Table 1.8-1
 - ◆ COLA Table 1.8-205
 - ◆ COLA addresses the DCD interface requirements in FSAR Section 8.2
 - ◆ Plant specific ITAAC
- ◆ Departure associated with voltage regulating transformers
 - ◆ clarified DCD language to indicate there are no current limiting components



Underground Cables

- ◆ COLA FSAR Section 17.6 Maintenance Rule Program
 - implemented prior to fuel load
- ◆ Condition monitoring of underground or inaccessible cables is incorporated into the maintenance rule program.
- ◆ The cable condition monitoring program incorporates lessons learned from industry operating experience, addresses regulatory guidance, and utilizes design information to determine the appropriate inspections, tests, and monitoring criteria.
- ◆ Takes into consideration Generic Letter 2007-01, "Inaccessible or Underground Power Cable Failures that Disable Accident Mitigation Systems or Cause Plant Transients"



Abbreviations and Acronyms

◆ COLA	Combined License Application
◆ DAS	Diverse Actuation System
◆ DCD	Design Control Document
◆ I&C	Instrumentation and Controls
◆ ICM	Interim Compensatory Measures
◆ ISG	Interim Staff Guidance
◆ ITAAC	Inspection, Tests, Analyses, and Acceptance Criteria
◆ LOLA	Loss of Large Areas of the Plant due to Explosions or Fire
◆ MSD	Mitigative Strategies Description



Abbreviations and Acronyms

◆ NEI	Nuclear Energy Institute
◆ RCP	Reactor Coolant Pump
◆ SFP	Spent Fuel Pool
◆ VEGP	Vogtle Electric Generating Plant

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

BEFORE THE COMMISSION

In the Matter of

Southern Nuclear Operating Company

**(Vogtle Electric Generating Plant,
Units 3 and 4)**

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Docket Nos. 52-025-COL and 52-026-COL

September 23, 2011

CERTIFICATE OF SERVICE

I hereby certify that copies of EXHIBIT SNCR00008 for the Vogtle Units 3 & 4 COL Mandatory Hearing in the above-captioned proceeding have been served by electronic mail as shown below, this 23rd day of September, 2011, and/or by e-submittal.

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