



# Vogtle 3 & 4 COL

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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  
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## **Selected Topics – Chapters 7, 8, 15, 19**

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- ◆ **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

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- ◆ 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 (pga = 0.44g)
  - ◆ The following soil-related failures were evaluated and screened out based on sufficient margins
    - ◆ Soil liquefaction
    - ◆ Soil bearing failure

# Other External Events

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- ◆ 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

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- ◆ 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)

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- ◆ 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

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- ◆ 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

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- ◆ 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

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- ◆ 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

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- ◆ 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

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- ◆ 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

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- ◆ 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**

<b>In the Matter of</b>	)	
	)	
<b>Southern Nuclear Operating Company</b>	)	<b>Docket Nos. 52-025-COL and 52-026-COL</b>
	)	
<b>(Vogtle Electric Generating Plant, Units 3 and 4)</b>	)	<b>September 23, 2011</b>
	)	

**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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Respectfully submitted,

(Original signed by M. Stanford Blanton)

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