


United States Nuclear Regulatory Commission Official Hearing Exhibit	
In the Matter of:	DUKE ENERGY CAROLINAS, LLC (William States Lee III Nuclear Station, Units 1 and 2)
	Commission Mandatory Hearing
	Docket #: 05200018 05200019
	Exhibit #: NRC-013-MA-CM01
	Admitted: 10/05/2016
	Identified: 10/05/2016 Withdrawn: Stricken:
	Other:



U.S.NRC

United States Nuclear Regulatory Commission

Protecting People and the Environment

NRC-013

Combined License Application Review William States Lee III Units 1 and 2 Safety Panel October 5, 2016

Panelists

- **Brian Hughes – Senior Project Manager**
- **Robert Roche-Rivera – Structural Engineer**
- **Kenneth Thomas – Emergency Preparedness Specialist**

Safety Panel Topics

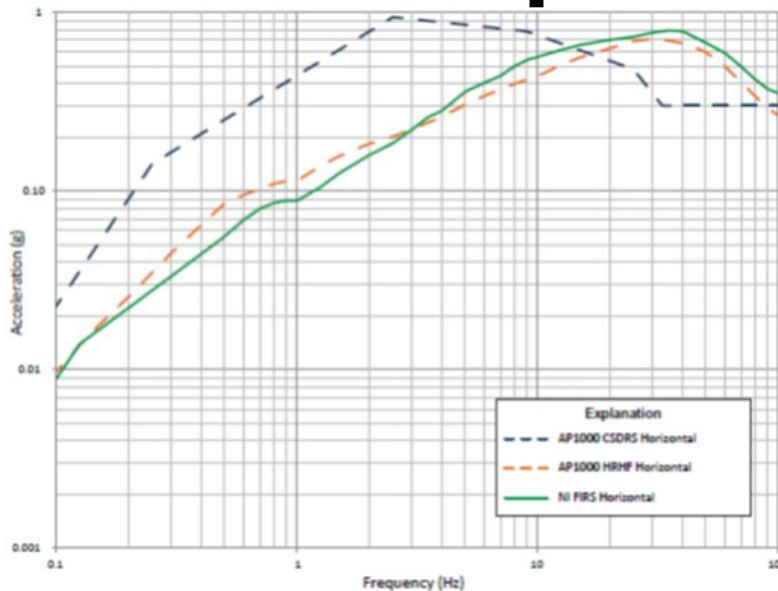
- **Site Foundation Response Spectra**
- **Emergency Operations Facility**

Lee Site Foundation Response Spectra (WLS DEP 2.0-1)

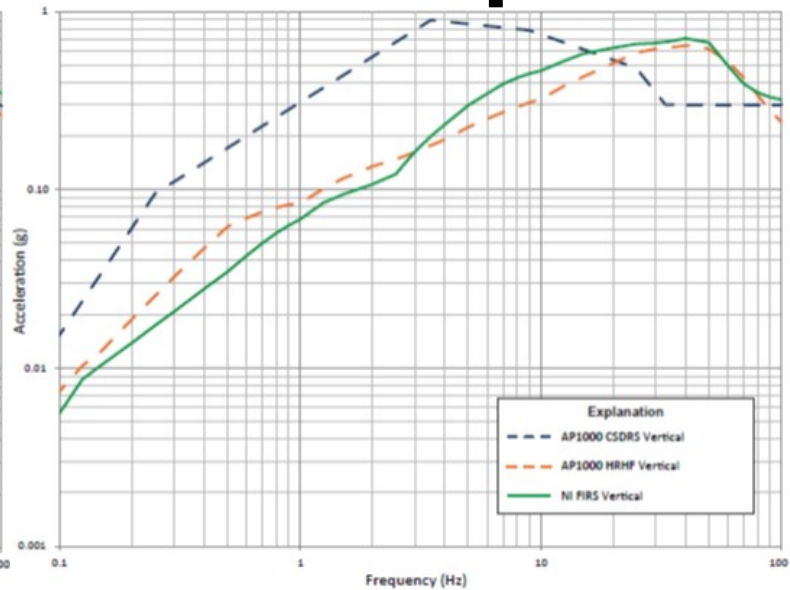
**Robert Roche-Rivera –
Structural Engineer**

Lee Site Foundation Response Spectra

Horizontal Spectra



Vertical Spectra



Lee Site Foundation Response Spectra

- **Exceeded the AP1000 CSDRS and HRHF spectra in the high frequency range.**
- **Required site-specific seismic evaluations of SSCs per the AP1000 DCD.**

Site-Specific Evaluation; ISRS Comparison

- **Site-specific evaluation was performed to demonstrate the high frequency exceedance is non-damaging.**
- **ISRS at DCD defined locations showed small exceedances.**

Evaluations of SSCs to Address ISRS Exceedances

- **NI SC-I and adjacent SC-II structures**
- **Primary components**
- **Piping systems**
- **Electro-mechanical equipment**

Site-Specific Evaluation Bounded by AP1000 Design:

- **Site-specific forces on NI SC-I structures are bounded by AP1000 forces.**
- **No physical interaction occurs between NI SC-I and adjacent SC-II structures.**

Site-Specific Evaluation Bounded by AP1000 Design:

- **Site-specific forces and stresses on primary components and piping systems are bounded by AP1000 forces and stresses, respectively.**

Site-Specific Evaluation Bounded by AP1000 Design:

- **Site-specific RRS for representative high frequency sensitive equipment are bounded by the AP1000 TRS.**
- **All future TRS will envelope the site-specific RRS.**

Emergency Operations Facility (EOF)

**Kenneth Thomas – Emergency
Preparedness Specialist**

Emergency Operations Facility (EOF)

- **DEC request to use the existing corporate EOF in Charlotte, NC – greater than 25 miles from the Lee site**
- **10 CFR Part 50, Appendix E, Section IV.E.8.b**

Existing Corporate EOF

- **Currently serves as the EOF for the McGuire (MNS), Catawba (CNS), and Oconee (ONS) Nuclear Stations**
- **MNS and CNS – since 1987**
- **All three sites – since 2005**
 - **SRM for SECY-05-0172**

Evaluation Assessed the EOF's Capability

- **Obtain and display plant data and radiological information**
- **Analyze plant technical information**

Evaluation Assessed the EOF's Capability

- **Provide technical briefings to Federal, State and local authorities responding to radiological emergencies**
- **Determine recommended public protective actions**

ITAAC and License Condition

- **Exercise required for Lee and one other site within the DEC fleet that demonstrates the EOF's capabilities to respond.**
- **Regulations in 10 CFR 50.47(b)(8) and Appendix E to Part 50 will be met.**

Recommendation

- **The staff recommends that the location for the EOF be approved.**
- **ACRS December 14, 2015 letter recommended approval.**

Acronyms

- **ACRS – Advisory Committee on Reactor Safeguards**
- **CFR – Code of Federal Regulations**
- **CSDRS – Certified Seismic Design Response Spectra**

Acronyms

- **HRHF – Hard Rock High Frequency**
- **ISRS – In-Structure Response Spectra**
- **ITAAC – Inspections, Tests, Analyses, and Acceptance Criteria**

Acronyms

- **NI – Nuclear Island**
- **RRS – Required Response Spectra**
- **SC-I – Seismic Category I**
- **SC-II – Seismic Category II**
- **SRM – Staff Requirements Memorandum**

Acronyms

- **SSC – Structure, System, and Component**
- **TRS – Test Response Spectra**