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August 28, 2007

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555-0001

Subject: Duke Power Company LLC d/b/a Duke Energy Carolinas, LLC
Oconee Nuclear Site, Units 1, 2, and 3
Docket Numbers 50-269, 50-270, and 50-287
Duke response to NRC Request for Additional Information in regard to License Amendment Request (LAR) to Revise the Updated Final Safety Analysis Report (UFSAR) Related to Auxiliary Building Sprinkler Systems Seismic Evaluation
License Amendment Request No. 2006-010

Reference: Letter from Duke Power Company LLC d/b/a Duke Energy Carolinas, LLC to U. S. Nuclear Regulatory Commission, "Oconee Nuclear Docket Numbers 50-269, 50-270, and 50-287 – Proposed License Amendment Request to Revise the Updated Final Safety Analysis Report (UFSAR) Related to Auxiliary Building Sprinkler Systems Seismic Evaluation; License Amendment Request No. 2006-010," dated November 16, 2006

In accordance with 10 CFR 50.90, Duke Power Company LLC d/b/a Duke Energy Carolinas, LLC (Duke) submitted an amendment request to Renewed Facility Operating Licenses Nos. DPR-38, DPR-47, and DPR-55 on November 16, 2006 proposing to revise its commitments for Auxiliary Building Water Level (Flood) and update the Updated Final Safety Analysis Report to describe the flood protection measures for the Auxiliary Building. The LAR requested NRC approval for the use of a realistic seismic analysis of the Auxiliary Building sprinkler piping systems to demonstrate that these non-seismic self-actuating sprinkler systems will not fail during a Maximum Hypothetical Earthquake (MHE).

In a letter dated May 9, 2007, Duke responded to a Request for Additional Information (RAI) transmitted by electronic mail from Mr. Leonard Olshan of the NRC on March 19, 2007. Subsequently, during a July 19, 2007 conference call, NRC requested additional information which was later confirmed by Mr. Olshan on July 27, 2007. Enclosure 2 provides Duke's response to this second RAI.

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NRR

There are no commitments contained in this letter. Inquiries on this amendment request should be directed to Bob Knight of the Oconee Regulatory Compliance Group at (864) 885-3282.

Sincerely,

Bruce Hamilton

B. H. Hamilton, Vice President
Oconee Nuclear Site

Enclosures:

1. Notarized Affidavit
2. Response to NRC Request for Additional Information

AFFIDAVIT

B. H. Hamilton, being duly sworn, states that he is Vice President, Oconee Nuclear Site, Duke Energy Carolinas, LLC that he is authorized on the part of said Company to sign and file with the U. S. Nuclear Regulatory Commission this revision to the Renewed Facility Operating License Nos. DPR-38, DPR-47, and DPR-55; and that all statements and matters set forth herein are true and correct to the best of his knowledge.

Bruce Hamilton

B. H. Hamilton, Vice President
Oconee Nuclear Site

Subscribed and sworn to before me this 28 day of August, 2007

Sheila A Smith

Notary Public

My Commission Expires:

6/12/2013

Date

SEAL

NRC Question 1
Were the spectra used in the "realistic" analysis broadened or unbroadened? If not, could Duke provide the justification?

Duke Response to Question 1
The input response spectra used in the realistic analysis of the Auxiliary Building Fire Protection piping systems were licensing basis unbroadened spectra. Oconee Updated Final Safety Analysis Report (UFSAR) Section 3.7.2.4.1 regarding Reactor Building piping analysis notes: "At the maximum acceleration peak of each specific curve used for the envelope curve, the envelope has a plateau of approximately ±10 percent to avoid the condition where a small change in frequency could result in a significant change in acceleration." In contrast, this statement is not included in Section 3.7.2.4.2 for the Auxiliary Building. In addition, the Auxiliary Building floor response spectra were more recently reviewed by the NRC under the Unresolved Safety Issue (USI) A-46 resolution. The NRC accepted the Auxiliary Building response spectra for resolution of USI A-46, although the NRC's Safety Evaluation declared them to be consistent with median centered criteria. The realistic piping analysis used the Auxiliary Building floor spectra consistent with the NRC's position that they should be considered median centered, including an additional 1.25 factor applied to the support loads.

NRC Question 2
Explain why the 1.7 allowable stress increase is acceptable for AISC designed supports.

Duke Response to Question 2
In Duke's previous response to this question[1] we noted that the increase of 1.7 was applied to the allowable stresses from AISC Part 1 in order to arrive at a load capacity approximately the same as that resulting from the use of AISC Part 2. This is reflected in Table 6-9, "Loading Combination and Acceptance Criteria for Supports and Miscellaneous Structural Members where AISC Stress Allowables are Used," of EPRI NP-6041, A Methodology for Assessment of Nuclear Power Plant Seismic Margin (Revision 1).

As a supplement to this response, use of ASIC Part 2 allowables is consistent with the allowable stresses used in pipe support evaluations for alternate leakage path piping to support deletion of Main Steam Isolation Valve (MSIV) leakage control systems in Boiling Water Reactor (BWR) plants submittals following the methodology of GE Topical Report NEDC-31858 (e.g., see response to NRC comment 2 in Georgia Power to USNRC, "Response to Request for Additional Information," dated February 3, 1994). This is also consistent with the Seismic Qualification Utility Group (SQUG) Generic Implementation Procedure (GIP)[2] stress allowables for checking embedded or exposed steel and structural steel cable tray support members. Section C.6.5 of the GIP includes the criteria for embedded or exposed steel, and Section 8.3.8 includes the criteria for structural steel members used as cable tray supports.

NRC Question 3
Provide the maximum stress vs. stress allowable for each of the 4 piping system analyses

Duke Response to Question 3
The piping stresses are as follows.

Piping System	Maximum stress (psi)	Allowable stress (psi)	Stress Ratio
Unit 1 Hatch Area	17,334	24,000	0.72
Unit 1 Drumming Area	22,569	24,000	0.94
Unit 2 Hatch Area	22,833	24,000	0.95
Unit 3 Hatch Area	17,191	24,000	0.72

NRC Question 4
Provide the maximum stress/load vs. stress/load allowable for the piping supports.

Duke Response to Question 4
The support loads are as follows.

Support Element	Load Calculation	Maximum Load (lbs)	Allowable Load (lbs)	Load Ratio
Rod Hangers - highest load & load ratio (over 200 threaded rods total)	Worst case threaded rod hanger	443	1002	0.44
Five Test Connections	Anchor bolt interaction	$t = 100$ $v = 11$	$T_{all} = 238$ $V_{all} = 475$	0.44
Unique ONS1 Hot Tool Crib	U-bolt tensile load	30	900	0.03
Unique ONS3 Personnel Hatch	Threaded rod hanger	107	668	0.16
Outlier 1-12	Fatigue check on short threaded rod hanger	18	66	0.27
t = Tensile load; T_{all} = Allowable tensile load; v = Shear load; V_{all} = Allowable shear load				

[1] Duke Power Company LLC d/b/a Duke Energy Carolinas, LLC, Oconee Nuclear Site, Units 1, 2, and 3, Docket Numbers 50-269, 50-270, and 50-287, "Duke response to NRC Request for Additional Information in regard to License Amendment Request (LAR) to Revise the Updated Final Safety Analysis Report (UFSAR) Related to Auxiliary Building Sprinkler Systems Seismic Evaluation," License Amendment Request No. 2006-010, dated May 9, 2007

[2] "Generic Implementation Procedure (GIP) for Seismic Verification of Nuclear Power Plant Equipment," Revision 2, Corrected February 14, 1992, Seismic Qualification Utility Group, February 1992.