



Serial: NPD-NRC-2009-176
July 29, 2009

10CFR52.79

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

**SHEARON HARRIS NUCLEAR POWER PLANT, UNITS 2 AND 3
DOCKET NOS. 52-022 AND 52-023
SUPPLEMENT 1 TO RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION LETTER
NO. 063 RELATED TO PROBABILISTIC RISK ASSESSMENT AND SEVERE ACCIDENT
EVALUATION**

- Reference:
1. Letter from Manny Comar (NRC) to James Scarola (PEC), dated May 31, 2009, "Request for Additional Information Letter No. 063 Related to SRP Section 19- Probabilistic Risk Assessment and Severe Accident Evaluation for the Shearon Harris Units 2 and 3 Combined License Application"
 2. Letter from Garry D. Miller (PEC) to U. S. Nuclear Regulatory Commission, dated July 6, 2009, "Response to Request for Additional Information letter No. 063 Related to Probabilistic Risk Assessment and Severe Accident Evaluation," Serial: NPD-NRC-2009-131

Ladies and Gentlemen:

Progress Energy Carolinas, Inc. (PEC) hereby submits a supplemental response to the Nuclear Regulatory Commission's (NRC) request for additional information provided in the referenced letter. A response to one of the NRC questions is addressed in the enclosure.

If you have any further questions, or need additional information, please contact Bob Kitchen at (919) 546-6992, or me at (919) 546-6107.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on July 29, 2009.

Sincerely,

Garry D. Miller
General Manager
Nuclear Plant Development

Enclosure

cc: U.S. NRC Region II, Regional Administrator
U.S. NRC Resident Inspector, SHNPP Unit 1
Mr. Brian Hughes, U.S. NRC Project Manager

Progress Energy Carolinas, Inc.
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NRC

**Shearon Harris Nuclear Power Plant Units 2 and 3
Supplement 1 to Response to NRC Request for Additional Information Letter No. 063
Related to SRP Section 19 for the Shearon Harris Units 2 and 3 Combined License
Application, Dated May 31, 2009**

<u>NRC RAI #</u>	<u>Progress Energy RAI #</u>	<u>Progress Energy Response</u>
19-3	H-0460	July 6, 2009; NPD-NRC-2009-131
19-4	H-0461	July 6, 2009; NPD-NRC-2009-131
19-5	H-0462	July 6, 2009; NPD-NRC-2009-131
19-6	H-0463	July 6, 2009; NPD-NRC-2009-131
19-7	H-0464	July 6, 2009; NPD-NRC-2009-131
19-8	H-0465	July 6, 2009; NPD-NRC-2009-131
19-9	H-0466	July 6, 2009; NPD-NRC-2009-131
19-10	H-0467	July 6, 2009; NPD-NRC-2009-131
19-11	H-0468	Response enclosed – see following pages

NRC Letter No.: HAR-RAI-LTR-063

NRC Letter Date: May 31, 2009

NRC Review of Final Safety Analysis Report

NRC RAI NUMBER: 19-11

Text of NRC RAI:

Discuss the basis for determining that the loss-of-offsite-power (LOSP) frequencies and recovery probabilities assumed in the AP1000 PRA (both at power and during shutdown including internal and external events) bound the expected site-specific values for Harris.

PGN RAI ID #: H-0468

PGN Response to NRC RAI:

AP1000 PRA assumptions for the Loss of Off-Site Power (LOSP), both at power and during shutdown, are discussed in DCD section 19.59. The initiating event frequency (IEF) used in the AP1000 PRA (at-power, internal events) for the LOSP is 0.12 events per year. This value was derived from Annex A of *Advanced Light Water Reactor Utility Requirements Document (URD)*, Vol. III, ALWR Passive Plant, Chapter 1, Appendix A, Revision 8, Electric Power Research Institute, March 1999.

The current AP1000 PRA does not take credit for full load rejection capability. The AP1000 PRA conservatively assumes loss of power from a switchyard without reserve power sources, for both at power and during shutdown, even though the AP1000 has a unit auxiliary transformer (UAT) and a reserve transformer (RAT) installed. As a result of these conservatisms, the requirement to evaluate details of the AP1000 LOSP design or site specific procedures, that have not yet been developed, is removed.

An assessment of AP1000 internal events was performed using an AP1000 Internal Events Checklist that was distributed to COL applicants by Westinghouse in early 2007. This assessment concluded that the PRA internal events for the AP1000 were determined to be applicable to HAR.

DCD Section 19.58 external events conclusions are bounding, for a specific site, if any of the following is true: the IEFs are lower than those assumed in DCD section 19.58; the IEFs are less than $1E-7$ events per year; or the CDF for a specific type of event is less than $1E-8$ events per year. The response to RAI 19-3 confirms that the High Winds, Floods, and Other External Events analysis documented in Section 19.58 is applicable to the Harris site.

Based on the above evaluation, it was concluded that the AP1000 PRA is applicable to the Harris site.

Associated HAR COL Application Revisions:

No COLA revisions have been identified associated with this response.

Attachments/Enclosures:

None.