



Serial: NPD-NRC-2009-209  
September 24, 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  
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 066 RELATED TO  
PROBABLE MAXIMUM FLOOD ON STREAMS AND RIVERS**

Reference: Letter from Brian Hughes (NRC) to James Scarola (PEC), dated August 27, 2009,  
"Request for Additional Information Letter No. 066 Related to SRP Section  
02.04.03 – Probable Maximum Flood on Streams and Rivers for the Shearon Harris  
Units 2 and 3 Combined License Application"

Ladies and Gentlemen:

Progress Energy Carolinas, Inc. (PEC) hereby submits our response to the Nuclear Regulatory Commission's (NRC) request for additional information provided in the referenced letter. A response to the NRC request 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 September 24, 2009.

Sincerely,

A handwritten signature in black ink that reads "Garry D. Miller". The signature is fluid and cursive.

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

DO84  
NRC

**Shearon Harris Nuclear Power Plant Units 2 and 3  
Response to NRC Request for Additional Information Letter No. 066 Related to  
SRP Section 02.04.03 for the Combined License Application, dated August 27, 2009**

<u>NRC RAI #</u>	<u>Progress Energy RAI #</u>	<u>Progress Energy Response</u>
02.04.03-5	H-0486	Response enclosed – see following pages

**NRC Letter No.:** HAR-RAI-LTR-066

**NRC Letter Date:** August 27, 2009

**NRC Review of Final Safety Analysis Report**

**NRC RAI #:** 02.04.03-5

**Text of NRC RAI:**

Progress Energy's response (NPD-NRC-2009-056) to RAI 2.4.3-4 stated, raising the Harris reservoir 20 ft above its current level, when combined with wave runup and wind wave effects, may impact safety related structures for the operating unit (Harris 1). The NRC staff requests the applicant identify and evaluate potential hazards arising from external flooding and wind-wave actions to structures, systems and components important to the safety of both Harris Unit 1 and the proposed new units.

The staff also requests a summary of both the methodology and results of the above evaluation.

**PGN RAI ID #:** H-0486

**PGN Response to NRC RAI:**

The normal water level (NWL) of Harris Lake will be raised to elevation 240 feet from the existing NWL of 220 feet. Subsequent to the response (Progress Energy letter No. NPD-NRC-2009-056) to RAI 02.04.03-4, Progress Energy evaluated several engineering solutions to reduce the Probable Maximum Flood (PMF) level in Harris Lake so that the maximum water level when combined with wind wave effects will be below El. 260 feet. The top of main and auxiliary dams and the plant grade elevation of Shearon Harris Nuclear Power Plant (SHNPP) Units 1, 2 and 3 are at elevation 260 feet.

Based on this evaluation one of the following two options will be implemented prior to raising the Lake level to 240 feet:

1. The existing spillway crest will be raised from elevation 220 feet to elevation 240 feet as presented in Section 2.4 of Shearon Harris Nuclear Power Plant (SHNPP) Units 2 & 3 COLA Application (COLA), Rev. 1. In addition, a 500-foot wide emergency spillway will be constructed west of the existing Main Dam spillway.
2. The existing spillway crest was proposed to be raised from elevation 220 feet to elevation 240 feet for both the spans as presented in Section 2.4 of SHNPP Units 2 & 3 COLA, Rev. 1. However in this option, the existing spillway crest will be raised to elevation 240 feet in only one 25-foot span and a tainter gate will be provided in the second span. For this case, the operation of the tainter gate will be assured by operating procedures to be developed during detailed design.

For both these options, the PMF level and the maximum water level with coincident wind wave action were evaluated. The methodology and results will be described in the supplemental responses to RAIs 02.04.03-1, 02.04.03-3, and 02.04.03-4 (Progress Energy RAI numbers H-0488, H-0489 and H-0485, respectively). The results show that the maximum water level due

to PMF and coincident wind wave action at the Main Dam, Auxiliary Dam and at SHNPP Unit 1, 2 and 3 are below elevation 260 feet. Therefore, the safety-related structures, systems and components of both Harris Unit 1 and proposed new units HAR 2 and HAR 3 are not affected by external flooding due to PMF in Harris Lake.

**Associated HAR COL Application Revisions:**

Associated FSAR revisions will be described in supplemental responses to RAIs 02.04.03-1, 02.04.03-3, and 02.04.03-4.

**Attachments / Enclosures:**

None.