



Serial: NPD-NRC-2012-024  
July 23, 2012

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  
SUPPLEMENTAL RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION LETTER NO.  
082 CONCERNING IMPLEMENTATION OF FUKUSHIMA NEAR-TERM TASK FORCE  
RECOMMENDATIONS**

- Reference:
1. Letter from Manny Comar (NRC) to John Elnitsky (PEC), dated May 24, 2012, "Request for Additional Information Letter No. 082 Concerning Implementation of Fukushima Near-Term Task Force Recommendations for the Shearon Harris Units 2 and 3 Combined License Application"
  2. Letter from John Elnitsky (PEC) to U. S. Nuclear Regulatory Commission (NRC), dated June 19, 2012, "Response to Request for Additional Information Letter No. 082 Concerning Implementation of Fukushima Near-Term Task Force Recommendations", Serial: NPD-NRC-2012-020.

Ladies and Gentlemen:

Progress Energy Carolinas, Inc. (PEC) hereby submits a partial response to the Nuclear Regulatory Commission's (NRC) request for additional information provided in Reference 1.

Responses to three of the NRC questions (01.05-2 through 01.05-4) are provided in the enclosure. The enclosure also identifies changes that will be made in a future revision of the Shearon Harris Nuclear Power Plant Units 2 and 3 application.

PEC previously provided the schedule for response to RAI question 01.05-1 concerning evaluation of updated seismic hazards in a letter dated June 19, 2012 (Reference 2).

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 23, 2012.

Sincerely,

A handwritten signature in black ink, appearing to read "Garry Miller", written over a horizontal line.

Garry Miller  
Senior Vice President  
Nuclear Engineering

Progress Energy Carolinas, Inc.  
P.O. Box 1551  
Raleigh, NC 27602

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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

**Shearon Harris Nuclear Power Plant, Units 2 and 3  
Supplement 1 to Response to Request for Additional Information Letter No. 082  
Concerning Implementation of Fukushima Near-Term Task Force Recommendations,  
Dated 5/24/2012**

<u>NRC RAI #</u>	<u>Progress Energy RAI #</u>	<u>Progress Energy Response</u>
01.05-1	H-0712	Future response per Serial: NPD-NRC-2012-020, 6/19/2012
01.05-2	H-0713	Response enclosed – see following pages
01.05-3	H-0714	Response enclosed – see following pages
01.05-4	H-0715	Response enclosed – see following pages

**NRC Letter No.:** HAR-RAI-LTR-082

**NRC Letter Date:** May 24, 2012

**NRC Review of Final Safety Analysis Report**

**NRC RAI NUMBER:** 01.05-2

**Text of NRC RAI:**

Develop mitigation strategies for beyond-design-basis external events as described in Attachment 3 to Order EA-12-049, (ML12054A735)

**PGN RAI ID #:** H-0713

**PGN Response to NRC RAI:**

Attachment 3 to Order EA-12-049, (ML12054A735) is identified as applicable to Vogtle Units 3 and 4 in SECY -12-0025, Enclosure 4. The basis for different requirements for Vogtle Units 3 and 4 from the requirements for other plants was based on the passive design and other features characteristic to the AP1000 design. These AP1000 features are standard, and thus, are also applicable to the HAR design. Therefore, a license condition is proposed for HAR with similar content as was required for Vogtle Units 3 and 4 in Attachment 3 of SECY -12-0025, Enclosure 4. Performing these actions prior to initial fuel load is included as the required time of implementation. This would ensure the mitigation strategies for beyond-design-basis external events are in place prior to irradiation of fuel when the strategies could potentially be necessary.

**Associated HAR COL Application Revisions:**

Add the following to COLA Part 10, Proposed License Conditions (Including ITAAC), after item 4, Emergency Planning Actions:

**MITIGATION STRATEGIES FOR BEYOND-DESIGN-BASIS EXTERNAL EVENTS**

Prior to initial fuel load, PEC shall address the following requirements:

- a. PEC shall develop, implement, and maintain guidance and strategies to maintain or restore core cooling, containment and spent fuel pool cooling capabilities following a beyond-design-basis external event.
- b. These strategies must be capable of mitigating a simultaneous loss of all ac power and loss of normal access to the normal heat sink and have adequate capacity to address challenges to core cooling, containment, and spent fuel pool cooling capabilities at all units on the Harris site.
- c. PEC must provide reasonable protection for the associated equipment from external events. Such protection must demonstrate that there is adequate capacity to address challenges to core cooling, containment, and spent fuel pool cooling capabilities at all units on the Harris site.
- d. PEC must be capable of implementing the strategies in all modes.
- e. Full compliance shall include procedures, guidance, training, and acquisition, staging, or installing of equipment needed for the strategies.

PEC shall within one (1) year after issuance of the HAR COL, submit to the NRC for review an overall integrated plan, including a description of how compliance with the requirements described in this license condition will be achieved.

PEC shall provide to the NRC an initial status report sixty (60) days following issuance of the HAR COL and at six (6) month intervals following submittal of the overall integrated plan described above which delineates progress made in implementing the requirements of this license condition.

**Attachments/Enclosures:**

None

**NRC Letter No.:** HAR-RAI-LTR-082

**NRC Letter Date:** May 24, 2012

**NRC Review of Final Safety Analysis Report**

**NRC RAI NUMBER:** 01.05-3

**Text of NRC RAI:**

Provide sufficient reliable instrumentation, able to withstand design-basis natural phenomena, to monitor spent fuel pool water level, as described in Attachment 3 to Order EA-12-051 (ML12054A679).

**PGN RAI ID #:** H-0714

**PGN Response to NRC RAI:**

The PEC response to this item is based on Attachment 3 of Order EA-12-051 (ML12054A679). This attachment is identified as applicable to Vogtle Units 3 and 4 in SECY-12-0025, Enclosure 6. The basis for different requirements for Vogtle Units 3 and 4 from the requirements for other plants was based on the design features of the AP1000. These AP1000 features are standard, and thus, are also applicable to the HAR design. Therefore, a license condition is proposed for HAR with similar content as was required for Vogtle Units 3 and 4 in Attachment 3 of SECY -12-0025, Enclosure 6. Performing these actions prior to initial fuel load is included as the required time of implementation. This would ensure reliable spent fuel pool level instrumentation is in place prior to irradiation of fuel when the instrumentation could potentially be necessary.

**Associated HAR COL Application Revisions:**

Add the following to COLA Part 10, Proposed License Conditions (Including ITAAC), after item 4, Emergency Planning Actions:

**RELIABLE SPENT FUEL POOL LEVEL INSTRUMENTATION**

Prior to initial fuel load, PEC will fully implement the following requirements for spent fuel pool level instrumentation.

- a. The spent fuel pool level instrumentation shall include the following design features:
  1. Arrangement: The spent fuel pool level instrument channels shall be arranged in a manner that provides reasonable protection of the level indication function against missiles that may result from damage to the structure over the spent fuel pool. This protection may be provided by locating the safety-related instruments to maintain instrument channel separation within the spent fuel pool area, and to utilize inherent shielding from missiles provided by existing recesses and corners in the spent fuel pool structure.
  2. Qualification: The level instrument channels shall be reliable at temperature, humidity, and radiation levels consistent with the spent fuel pool water at saturation conditions for an extended period.

3. Power supplies: Instrumentation channels shall provide for power connections from sources independent of the plant alternating current (ac) and direct current (dc) power distribution systems, such as portable generators or replaceable batteries. Power supply designs should provide for quick and accessible connection of sources independent of the plant ac and dc power distribution systems. Onsite generators used as an alternate power source and replaceable batteries used for instrument channel power shall have sufficient capacity to maintain the level indication function until offsite resource availability is reasonably assured.
  4. Accuracy: The instrument shall maintain its designed accuracy following a power interruption or change in power source without recalibration.
  5. Display: The display shall provide on-demand or continuous indication of spent fuel pool water level.
- b. The spent fuel pool instrumentation shall be maintained available and reliable through appropriate development and implementation of a training program. Personnel shall be trained in the use and the provision of alternate power to the safety-related level instrument channels.

PEC shall within one (1) year after issuance of the HAR COL, submit to the NRC for review an overall integrated plan, including a description of how compliance with the requirements described in this license condition will be achieved.

PEC shall provide to the NRC an initial status report sixty (60) days following issuance of the HAR COL and at six (6) month intervals following submittal of the overall integrated plan described above which delineates progress made in implementing the requirements of this license condition.

**Attachments/Enclosures:**

None

**NRC Letter No.:** HAR-RAI-LTR-082

**NRC Letter Date:** May 24, 2012

**NRC Review of Final Safety Analysis Report**

**NRC RAI NUMBER: 01.05-4**

**Text of NRC RAI:**

The NRC staff requests that Progress Energy Carolinas, Inc address provisions for enhancing emergency preparedness as it relates to staffing and communications associated with Recommendation 9.3 outlined in Enclosure 5 of the March 12, 2012 letter "Request for information pursuant to Title 10 of the *Code of Federal Regulations* 50.54(f) regarding Recommendations 2.1, 2.3, and 9.3, of the near-term task force review of insights from the Fukushima Dai-Ichi accident." (ML12053A340)

**PGN RAI ID #:** H-0715

**PGN Response to NRC RAI:**

PEC's response to this item is based on Recommendation 9.3 outlined in Enclosure 5 of the March 12, 2012 50.54(f) letter. PEC proposes a license condition as set forth below to address this RAI.

In a letter from the NRC to NEI (ADAMS Accession No. ML12131A043), the NRC staff indicated that NEI-12-01, Revision 0, dated May 2012, was found to be an acceptable method for licensees to employ when responding to the 10 CFR 50.54(f) letters regarding NTTF Recommendation 9.3.

Recommendation 9.3 outlined in Enclosure 5 of the March 12, 2012 50.54(f) letter includes request for information items beyond those directing the communications and staffing analyses. Some of these items are not explicitly stated in the proposed license condition since they are addressed in NEI 12-01, Revision 0.

The proposed license condition has a milestone of at least two (2) years prior to scheduled fuel load to support completion prior to the full participation Emergency Planning exercise with one exception. The implementation of corrective actions identified in the communications capability assessment is set at least one hundred eighty (180) days prior to scheduled initial fuel load to support any required equipment installation which may not be possible at an earlier time in a plant under construction. The limit of one hundred eighty (180) days prior to scheduled initial fuel load for completion of the corrective actions is also consistent with a completion milestone for Emergency Planning program implementation described in FSAR Chapter 13.

**Associated HAR COL Application Revisions:**

Add the following to COLA Part 10, Proposed License Conditions (Including ITAAC), after item 4, Emergency Planning Actions:



a. Communications

At least two (2) years prior to scheduled initial fuel load, PEC shall have performed an assessment of on-site and off-site communications systems and equipment required during an emergency event to ensure communications capabilities can be maintained during prolonged station blackout conditions. The communications capability assessment will be performed in accordance with NEI 12-01, "Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities", Revision 0.

At least one hundred eighty (180) days prior to scheduled initial fuel load, PEC shall complete implementation of corrective actions identified in the communications capability assessment described above, including any related emergency plan and implementing procedure changes and associated training.

b. Staffing

At least two (2) years prior to scheduled initial fuel load, PEC shall have performed assessments of the onsite and augmented staffing capability to satisfy the regulatory requirements for response to a multi-unit event. The staffing assessments will be performed in accordance with NEI 12-01, "Guideline for Assessing Beyond Design Basis Accident Response Staffing and Communications Capabilities", Revision 0.

At least two (2) years prior to scheduled initial fuel load, PEC shall revise the HAR Emergency Plan to include the following:

- Incorporation of corrective actions identified in the staffing assessments described above.
- Identification of how the augmented staff will be notified given degraded communications capabilities.

**Attachments/Enclosures:**

None