



Serial: NPD-NRC-2009-031
February 27, 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. 053 RELATED TO
EMERGENCY PLANNING**

Reference: Letter from Brian C. Anderson (NRC) to James Scarola (PEC), dated February 2, 2009, "Request for Additional Information Letter No. 053 Related to SRP Section 13.3 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. 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.

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 February 27, 2009.

Sincerely,

Garry D. Miller
General Manager
Nuclear Plant Development

Enclosure

cc : U.S. NRC Director, Office of New Reactors/NRLPO
U.S. NRC Office of Nuclear Reactor Regulation/NRLPO
U.S. NRC Region II, Regional Administrator
U.S. NRC Resident Inspector, SHNPP Unit 1
Mr. Manny Comar, U.S. NRC Project Manager

**Shearon Harris Nuclear Power Plant Units 2 and 3
Response to NRC Request for Additional Information Letter No. 053 Related to
SRP Section 13.3 for the Combined License Application, dated February 2, 2009**

NRC RAI #

13.03-77

Progress Energy RAI #

H-0406

Progress Energy Response

Response enclosed – see following pages

NRC Letter No.: HAR-RAI-LTR-053

NRC Letter Date: February 2, 2009

NRC Review of Final Safety Analysis Report

NRC RAI #: 13.03-77

Text of NRC RAI:

Emergency Action Levels (EALs)

EALs are discussed in Section D, "Emergency Classification System," of the application, Part 5

Initial EALs, which are required by 10 CFR 50.47(b)(4) and Section IV.B of Appendix E to 10 CFR Part 50, must be approved by the NRC. The Shearon Harris combined license (COL) application does not fully address certain aspects of the required EAL scheme. This is because various equipment set points and other information cannot be determined until the as-built information is available; e.g., head corrections, radiation shine, final technical specifications, and equipment calculations and tolerances. The NRC has been evaluating possible options to ensure applicants address the regulations. The NRC is presenting the applicant with two options to satisfy its EAL obligations:

Option 1 – Submit an entire EAL scheme, which contains all site-specific information, including set points. Until this information is finalized, EALs would remain an open item.

Option 2 – Submit emergency plan Section D, "Emergency Classification System," which addresses the four critical elements of an EAL scheme (listed below). The NRC will determine the acceptability of the EAL scheme.

- Critical Element 1* – Applicant proposes an overview of its emergency action level scheme including defining the four emergency classification levels, (Notification of Unusual Event, Alert, Site Area Emergency, and General Emergency), as stated in NEI 99-01, Revision 5, with a general list of licensee actions at each emergency classification level.

- Critical Element 2* – Applicant proposes to develop the remainder of its EAL scheme by using specified NRC endorsed guidance document. In the development of its EALs, the proposed EALs should be developed with few or no deviations or differences from NRC guidance, other than those attributable to the specific reactor design. NEI 07-01, if endorsed, will be applicable to the AP1000 and ESBWR (passive) reactor designs, and NEI 99-01 is applicable to all (nonpassive) reactor designs. If applicable, EALs related to digital instrumentation and control must be included. The NRC must find in its Safety Evaluation Report that this approach is acceptable for each site.

- Critical Element 3* – Applicant proposes a License Condition (LC) that the applicant will create a fully developed set of EALs in accordance with the specified guidance document. These fully developed EALs must be submitted to the NRC for confirmation at least 180 days prior to fuel load.

Critical Element 4 – The EALs must be kept in a document controlled by 10 CFR 50.54(q), such as the emergency plan, or a lower tier document, such as the Emergency Plan Implementing Procedures.

Please review the two options provided above, identify which option will be chosen, and provide the detailed EAL information in support of the chosen option.

PGN RAI ID #: H-0406

PGN Response to NRC RAI:

Progress Energy will use Option 2 for the Harris Unit 2 and 3 EALs. The Harris Unit 2 and 3 approach to each of the Critical Elements discussed in NRC's Request for Additional Information is described below:

Critical Element 1 – Shearon Harris Nuclear Power Plant Units 1, 2, and 3 COL Application Part 5, Emergency Plan Section D, Paragraph D.1, provides an overview defining the four emergency classification levels: Notification of Unusual Event, Alert, Site Area Emergency, and General Emergency as defined in NEI 99-01, Rev. 5.

A general list of Harris Site actions at each emergency classification level is discussed in the Harris Emergency Plan Table E-1 through Table E-4 for an Unusual Event, Alert, Site Area Emergency and General Emergency, respectively. Each table identifies the:

- Emergency Classification Description
- Radioactive Release Potential
- Notification –entity and associated time frame if applicable
- Activation – onsite and offsite facilities

In summary, emergency classification level definitions and associated Harris Site actions at each level are:

Notification of Unusual Event

Events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring off-site response or monitoring are expected unless further degradation of safety systems occurs.

Harris Plant actions undertaken at the Notification of Unusual Event include promptly informing State and local authorities of the event, augmenting on-shift resources as needed, assessment and response, and escalation to a more severe class, if appropriate. If the emergency class is not escalated to a more severe class, then State and local authorities will be notified of event termination in accordance with implementing procedures.

Alert

Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of the EPA PAG exposure levels.

Harris Plant actions undertaken at the Alert emergency class include those described for the Notification of Unusual Event and activation of the Emergency Operations Facility, Technical Support Center, Operational Support Center and Joint Information Center. An individual is dedicated to provide plant status updates to offsite authorities and periodic media briefings

(jointly with offsite authorities when practicable). On-site and off-site monitoring teams are dispatched, meteorological assessments are provided to offsite authorities, as are dose estimates and projections based on available plant condition information and foreseeable contingencies, if any radioactive releases are in progress.

Site Area Emergency

Events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public or HOSTILE ACTION that results in intentional damage or malicious acts; 1) toward site personnel or equipment that could lead to the likely failure of or; 2) that prevent effective access to, equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA PAG exposure levels beyond the site boundary.

Harris Plant actions undertaken at the Site Area Emergency class include those described for the Alert emergency class.

General Emergency

Events are in progress or have occurred which involve actual or IMMINENT substantial core degradation or melting with potential for loss of containment integrity or HOSTILE ACTION that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA PAG exposure levels off-site for more than the immediate site area.

Harris Plant actions undertaken at the General Emergency class include those described for the Site Area Emergency class except there is no emergency class for escalation.

Critical Element 2 – Harris Units 2 and 3 will develop the remainder of the site-specific EAL scheme using NEI 07-01, Methodology for Development of Emergency Action Levels Advanced Passive Light Water Reactors, once endorsed by the NRC Staff, or equivalent guidance based on NRC Staff feedback. The fully developed site-specific EAL scheme will be included in the Emergency Plan or lower tier Emergency Plan Implementing Procedures with no deviations. Accordingly, the Harris Plant Emergency Plan will remove the current reference to NEI 07-01 if not endorsed by the NRC in a future revision of the Emergency Plan from:

- Section D.1, Classification of Emergency
- Section D.3.2, Emergency Classification Units 2 and 3
- Appendix 2, References, Step P
- Annex 2, HNP Units 2 and 3 Specific Information, Step A2-2

Critical Element 3 – Progress Energy proposes the following License Condition related to the creation of a fully developed set of site-specific EALs in accordance with the guidance document discussed above for Harris Units 2 and 3:

PROPOSED LICENSE CONDITION:

Progress Energy shall submit a fully developed set of site-specific Emergency Action Levels (EALs) for Harris Units 2 and 3 to the NRC in accordance with the current NRC endorsed revision of NEI 07-01, or equivalent NRC endorsed EAL scheme, with no deviations. The EALs shall have been discussed and agreed on by the licensee and State and local governmental authorities. These fully developed EALs shall be submitted to the NRC for confirmation at least two (2) years prior to initial fuel load.

This license condition will be added to Part 10 of the Harris Unit 2 and 3 COL Application.

Critical Element 4 – The fully developed site-specific EAL scheme will be incorporated into a future lower tier document, such as the Emergency Plan Implementing Procedures or directly into the Emergency Plan. Accordingly, future changes to the EAL scheme will require an evaluation under 10 CFR 50.54(q) to ensure such changes will not reduce the effectiveness of the Emergency Plan or associated lower tier document(s).

Associated HAR COL Application Revisions:

The following changes will be made to the HAR COL application in a future revision:

1. Current COLA Part 5, Emergency Plan – Revise Section D.1.1, D.1.2, D.1.3, and D.1.4 definitions of Unusual Event, Alert, Site Area Emergency and General Emergency respectively to match NEI 99-01 definitions for stated emergency classifications.

Current COLA Part 5, Emergency Plan wording:

D.1.1 UNUSUAL EVENT

Events are in process or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs. Unusual Event is equivalent to the NRC designated class "Notification of Unusual Events."

D.1.2 ALERT

Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of intentional malicious dedicated efforts of a hostile act. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.

D.1.3 SITE AREA EMERGENCY

Events are in process or have occurred which involve an actual or likely major failures of plant functions needed for protection of the public or security events that result in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) prevents effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the Site boundary.

D.1.4 GENERAL EMERGENCY

Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or security events that result in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.

NEI 99-01 Revision 5 wording for the stated Emergency Classifications:

D.1.1 Notification of Unusual Event

Events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated. No

releases of radioactive material requiring off-site response or monitoring are expected unless further degradation of safety systems occurs.

D.1.2 Alert

Events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of the EPA PAG exposure levels.

D.1.3 Site Area Emergency

Events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public or HOSTILE ACTION that results in intentional damage or malicious acts; 1) toward site personnel or equipment that could lead to the likely failure of or; 2) that prevent effective access to, equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA PAG exposure levels beyond the site boundary.

D.1.4 General Emergency

Events are in progress or have occurred which involve actual or IMMINENT substantial core degradation or melting with potential for loss of containment integrity or HOSTILE ACTION that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA PAG exposure levels off-site for more than the immediate site area.

2. Add the following to Part 10, ITAAC:

Progress Energy shall submit a fully developed set of site-specific Emergency Action Levels (EALs) for Harris Units 2 and 3 to the NRC in accordance with the current NRC endorsed revision of NEI 07-01, or equivalent NRC endorsed EAL scheme, with no deviations. The EALs shall have been discussed and agreed on by the licensee and State and local governmental authorities. These fully developed EALs shall be submitted to the NRC for confirmation at least two (2) years prior to initial fuel load.

Attachments/Enclosures to Response to NRC:

None.