



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

December 18, 2009

Chris L. Burton, Vice President  
Shearon Harris Nuclear Power Plant  
Carolina Power & Light Company  
Post Office Box 165, Mail Zone 1  
New Hill, North Carolina 27562-0165

SUBJECT: SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1 – REQUEST FOR  
ADDITIONAL INFORMATION REGARDING REQUEST FOR REVIEW AND  
APPROVAL OF PROPOSED CHANGES TO THE EMERGENCY ACTION  
LEVELS (TAC NO. ME1227)

Dear Mr. Burton:

By letter dated April 30, 2009, as supplemented by letter dated July 1, 2009, Carolina Power & Light Company, the licensee, now doing business as Progress Energy Carolinas, Inc., submitted a request for review and approval of proposed changes to the Emergency Action Levels at the Shearon Harris Nuclear Power Plant, Unit 1 (HNP), to bring them into alignment with the guidance provided by Nuclear Energy Institute 99-01, "Methodology for Development of Emergency Action Levels."

The U.S. Nuclear Regulatory Commission staff has reviewed the licensee's submittals and determined that it needs additional information in order to complete its review of the requested changes for HNP. Please respond to the enclosed requests by January 22, 2010, in order to facilitate a timely completion of the staff review. Please contact me at 301-415-3178 if you have any questions on this issue, would like to participate in a conference call, or if you require additional time to submit your responses.

Sincerely,

A handwritten signature in black ink, appearing to read "Marlayna Vaaler".

Marlayna Vaaler, Project Manager  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-400

Enclosure: Request for Additional Information

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REQUEST FOR ADDITIONAL INFORMATION  
SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1  
REQUEST FOR REVIEW AND APPROVAL OF PROPOSED CHANGES  
TO THE EMERGENCY ACTION LEVELS  
DOCKET NO. 50-400

By letter dated April 30, 2009 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML091280271), as supplemented by letter dated July 1, 2009 (ADAMS Accession No. ML091890766), Carolina Power & Light Company (the licensee), now doing business as Progress Energy Carolinas, Inc., submitted a request for review and approval of proposed changes to the Emergency Action Levels (EALs) at the Shearon Harris Nuclear Power Plant, Unit 1 (HNP), to bring them into alignment with the guidance provided by Nuclear Energy Institute (NEI) 99-01, "Methodology for Development of Emergency Action Levels."

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the licensee's submittals and determined that it needs responses to the following questions in order to complete its analysis of the requested changes for HNP:

RAI #	EAL	Question
	GENERIC	<p>It is expected that licensees will adhere to the endorsed guidance, particularly for Initiating Conditions and Definitions, with no differences or deviations other than those related to a licensee's particular design. This is to ensure regulatory stability of the Emergency Action Level (EAL) scheme.</p> <p>This also ensures that, as stated in Title 10 of the <i>Code of Federal Regulations</i> (10 CFR) Paragraph 50.47(b)(4), licensees implement a "...standard emergency classification and action level scheme...."</p> <p>While the NRC is not enforcing strict verbatim compliance with the endorsed guidance, where applicable the NRC will be pointing out areas where it is expected that the endorsed guidance will be used to ensure implementation of a standard scheme. This is primarily based upon industry and NRC experience with issues related to particular EALs.</p> <p>While formatting is not technically relevant to the NRC staff's review of EAL changes, when inconsistent formatting might result in potential misunderstanding, a request for additional information (RAI) will be developed to request correction of the formatting or to obtain additional information in support of the deviation.</p>

Enclosure

RAI #	EAL	Question
1	GENERAL	Verify that all stated values, set points, and indications provided are within the calibrated range of the applicable instrumentation. Offscale high or low thresholds are usually not within the calibrated range of instrumentation; therefore, please justify as appropriate.
2	SECT 1.0	While no specific section in NEI 99-01, Revision 5 (NEI 99-01 R5), documents the purpose of the EAL Technical Bases Document (EAL TBD), it can be implied from statements made in NEI 99-01 R5, Sections 4.2, 5.1, and particularly 5.3. Please revise the purpose statement in Section 1.0 to align with NEI 99-01 R5, or provide justification for why this is not necessary.
3	SECT 2.6	<p>Please explain how having three EAL Wallboards is more effective than two EAL Wallboards. The normal implementation method is for a HOT EAL Wallboard and a COLD EAL Wallboard. Having a third EAL Wallboard, for ALL Conditions, is potentially problematic in that the staff could envision a scenario whereby only the EAL Wallboard applicable to the current operating mode is reviewed by EAL decision-makers, particularly prior to the Emergency Response Organization (ERO) being activated.</p> <p>Please provide justification to the staff that having three EAL Wallboards will never cause a situation whereby an ERO decision-maker neglects the ALL Conditions EAL Wallboard when reviewing the applicable HOT/COLD EAL Wallboard, or vice versa. Alternatively, revise your implementation strategy to incorporate the EALs applicable to ALL/COLD into the COLD EAL Wallboard and those applicable to ALL/HOT into the HOT EAL Wallboard.</p>
4	SECT 3.0	The staff requests that ADAMS Accession Number ML080450149 be used to reference NEI 99-01 R5, in order to ensure that the multiple draft copies of this document that are in ADAMS are not inadvertently referenced. Accordingly, please revise Section 3.0 to reference this accession number.
5	SECT 4.0	<ol style="list-style-type: none"> <li>1. It is expected that definitions are verbatim from the endorsed guidance (i.e., NEI 99-01 R5), with the exception of terms specifically defined by the licensee, in order to ensure the implementation of a standard emergency classification and action level scheme.</li> <li>2. Please define the terms EXPLOSION and SABOTAGE as worded in the endorsed guidance, or provide adequate justification supporting the deviation.</li> <li>3. As noted above, provide the site-specific definition for VITAL AREA rather than using the generic wording from the endorsed guidance.</li> </ol>

RAI #	EAL	Question
6	RU1.1 RU1.2 RA1.1 RA1.2 RA1.3	<ol style="list-style-type: none"> <li>1. Please provide documentation to support the statement that the values "2 (200) X HIGH ALARM" are within the calibrated range of the applicable instrumentation.</li> <li>2. The statement: "Release should not be prorated or averaged. For example, a release exceeding 4 (600) X ODCM [Offsite Dose Calculation Manual] for x minutes does not meet the threshold," is captured as developer information in NEI 99-01 R5 in error.</li> </ol> <p>This is not considered by the staff to be developer information; therefore, please incorporate it back into the EAL TBD or provide sufficient justification for why it is not applicable. Please note that this information is captured adequately in the plant-specific basis information provided for RU1.3; the staff recommends carrying this information into RU1.1, RU1.2, RA1.1, and RA1.2, as applicable.</p>
7	RS1.1	<p>Please provide documentation to support the determination that radiation monitor RM-1WV-3546-1 can effectively differentiate between the Alert value of 1.95E+7 micro-Curies per second (<math>\mu\text{Ci}/\text{sec}</math>) and the Site Area Emergency value of 9.84E+7 <math>\mu\text{Ci}/\text{sec}</math>. While these may be the calculated values, unless the instrument alarms at these values, a typical logarithmic scale cannot be read to this accuracy. In general, the gap between these emergency classification levels (ECLs) is about 1 decade to aid in visually determining the difference between the ECLs.</p>
8	RS1.2	<p>The last paragraph from the endorsed guidance is not developer information, and is therefore expected to be incorporated into the site-specific EAL technical bases documents. Accordingly, please restore the paragraph related to dose assessment being based upon actual meteorology as it is germane to understanding the intent of this EAL, or provide adequate justification as to why it is not applicable.</p>
9	RS1.3 RG1.3 HU2.1	<p>Please restore the note related to timing as stated in the endorsed guidance, or provide adequate justification to support why it is not applicable.</p>
10	RU2.1	<p>Please revise the EAL for the first threshold to document the indications used as the basis for making this determination, or provide adequate justification to support the deviation.</p>
11	RU2.2	<p>The site-specific EAL bases information states that portable survey instruments may be used for this assessment. Please provide documentation to support that this is an acceptable approach to use for an EAL that is expected to be determined within 15 minutes. In addition, please provide a discussion to support why this information is not incorporated into the actual EAL wording, or revise accordingly.</p>

RAI #	EAL	Question
12	RA2.1	Please explain what the asterisks are meant to represent on the Fuel Handling Building Emergency Exhaust Monitors listed.
13	RA2.3 CU1.2 CU2.2 CU2.3 SS1.2	When using the same initiating condition (IC) numbering base (RA2.1, RA2.3, etc.), the IC noun name is expected to be the same. Accordingly, please provide a discussion to justify why this is not practiced at HNP, or revise the EALs appropriately to follow the endorsed guidance.
14	CU4.1 SU4.2	Please provide documentation to support the conclusion that the "radio communications network" can adequately suffice for notifications/communications with the NRC, or revise accordingly.
15	HU1.1 HA1.1	Please confirm that the stated alarms and indicators are available in the Control Room; or if not, justify the effect these alarms and indicators have on the timing of these EALs.
16	HA1.1	The first paragraph from the endorsed guidance is applicable to this EAL. Please provide documentation to support this deviation or revise accordingly.
17	SU5.1	The staff expects a radiation monitor to be associated with this EAL as well as an activity threshold. The justification provided for deleting this portion of the EAL is inadequate as the EAL is at the Notice of Unusual Event (NOUE) level, and is therefore intended to be a precursor threshold used to recognize a beyond normal event that may require further attention from the site. Even if the monitors used for this EAL are subsequently isolated in accordance with the abnormal operating procedure (AOP), declaration of the event is warranted. Therefore, please provide a more detailed justification supporting the deletion of this portion of the EAL, or revise accordingly.
18	FISSION BARRIER MATRIX	Please provide more documentation to support what was reviewed and what was considered as potentially part of the "OTHER" indicators as outlined in the endorsed guidance (line 7 for all barriers). The staff needs to conclude that the licensee has exhausted all reasonable efforts to determine a site-specific indicator for a loss or potential loss of any fission barrier.

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*/RA/*

Marlayna Vaaler, Project Manager  
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NRR-088

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\*by memo

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