UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
245 PEACHTREE CENTER AVENUE NE, SUITE 1200
ATLANTA, GEORGIA 30303-1257

October 3, 2012

EA-12-132

Mr. George Hamrick
Site Vice President
Carolina Power and Light Company
Shearon Harris Nuclear Power Plant
P. O. Box 165, Mail Code: Zone 1
New Hill, North Carolina 27562-0165

SUBJECT: SHEARON HARRIS NUCLEAR POWER PLANT - FINAL SIGNIFICANCE DETERMINATION OF A WHITE FINDING, NOTICE OF VIOLATION, AND ASSESSMENT FOLLOW-UP LETTER (NRC INSPECTION REPORT 05000400/2012010)

Dear Mr. Hamrick:

This letter provides the final significance determination of the two preliminary White findings and associated apparent violations (AVs) discussed in NRC Inspection Report (IR) No. 05000400/2012007, dated July 16, 2012. The first preliminary White finding and AV involved multiple examples in which the Emergency Operations Facility (EOF) and associated equipment were not adequately maintained for protracted time periods between approximately August 2009 to November 2011, due to an apparent lack of adequate control over maintenance of ventilation system equipment. The second preliminary White finding and AV involved the potential that the Technical Support Center (TSC) could not be maintained during an emergency response, after your staff reduced the calculated unfiltered air inleakage. In this case, the calculation change may have rendered the TSC less than fully functional because the habitability effects on the TSC were not evaluated when the inleakage value was revised. The above two findings also represented AVs of 10 CFR 50.54(q) and 10 CFR 50.47(b)(8), which together require that adequate emergency facilities such as the EOF and TSC be maintained. Additionally, 10 CFR Part 50, Appendix E, Section IV.E.8 (2011 version) specifies that emergency facilities shall include a TSC and an EOF from which effective direction can be given and effective control can be exercised during an emergency.

This letter also provides the results of a third AV that was assessed using the NRC's traditional enforcement process. This AV involved the failure to report a major loss of emergency assessment capability to the NRC within 8 hours as required by 10 CFR 50.72(b)(3)(xiii).

At your request, a Regulatory/Pre-Decisional Enforcement Conference was held on August 24, 2012, to discuss Carolina Power and Light Company (CP&L) views on these issues. A meeting summary was issued on August 28, 2012, which includes copies of the slide presentation made by CP&L (ADAMS Accession # ML12242A432). During the meeting, your staff described your assessment of the significance of the findings, the corrective actions planned and taken, and the results of your root cause evaluations of the findings.

For the first finding and related AV involving the EOF, you acknowledged the existence of performance deficiencies associated with facility oversight and maintenance controls. In response to the NRC's concerns, your staff conducted additional engineering reviews and calculations to determine the functional status of the EOF. Following the regulatory conference, your staff also provided to the NRC additional updated calculations. These functional habitability calculations were performed for temperature, humidity, carbon dioxide, and radiological conditions. As presented at the conference, you concluded that the performance deficiency did not cause loss of a planning standard function such that the EOF was functional but degraded. Your review identified three periods in which the EOF could be considered non-functional, however, none of these periods exceeded seven days. Based on your review, you concluded that the significance of the EOF issue should be considered to be of very low safety significance (Green).

As you presented at the conference, your staff's calculations indicated that portions of the EOF would reach a maximum of 87 ^{o}F because of the degraded ventilation system. While there is no specific stated NRC temperature for EOF habitability or for EOF equipment, an elevated temperature is of particular concern when emergency response organization members are under stress, as in emergency response situations during which they must effectively conduct their emergency plan functions. Although you indicated that compensatory measures would likely have been taken if necessary to staff the EOF for an emergency, no procedurally controlled compensatory measures had been established; nor were compensatory measures planned or taken for the periods of time acknowledged above when you considered the EOF non-functional.

Regarding the potential for elevated CO_2 concentration levels, the NRC notes that the back-draft damper in the normal ventilation supply path was found rusted closed on January 25, 2010. Based on the condition of the damper and the lack of previous testing by your staff, it is reasonable to conclude that this condition existed for a period of greater than seven days. With this configuration, swapping the EOF ventilation system to the emergency mode of operation could not be ensured, in which case you assert in your calculations NAI-1651-001 Rev 0 and NAI-1680-002, Revision 0, that the CO_2 concentration in the facility would build-up to greater than 5000 parts per million (PPM) in approximately five to six hours. The NRC notes that the Harris facility does not maintain a procedure for sampling CO_2 in the EOF, so response staff likely would not be aware of rising concentration levels during facility use. The elevated CO_2 concentration, combined with the stress associated with an actual emergency in a facility with temperatures at the elevated levels you calculated, would likely have impaired at least one key responder in his or her ability to perform an assigned emergency response function.

Regarding radiological conditions in a postulated accident, the NRC reviewed dose considerations related to the equipment deficiencies, and reached a conclusion similar to that of your staff. Although dose rates in the facility would have been elevated, personnel staffing the facility would not have received a dose in excess of the 5 Rem total effective dose equivalent (TEDE) limit during design basis accident conditions.

Regarding the periods of time in which the EOF was considered to be non-functional, the NRC used Inspection Manual Chapter (IMC) 0609, Appendix B "Emergency Preparedness Significance Determination Process" Table 5.8-1 for assessing the significance of issues. For the circumstances of the Harris EOF, a primary consideration is whether the EOF was not functional for a period longer than seven days from the time of discovery, to the extent that any

key emergency response organization (ERO) member could not perform his/her assigned emergency plan functions, in the absence of compensatory measures. As indicated in IMC 0609, the time duration is considered from the time of discovery and is not limited to the maintence periods you indicated in your presentation. Based on the inspection and information presented at the conference, the NRC concluded that sufficient opportunity existed for Harris staff to recognize the degraded condition of the EOF. As such, we have concluded that the time periods of EOF non-functional status were as stated in our inspection report.

After considering the information developed during the inspection and the information provided by CP&L during the conference, the NRC has concluded that the finding involving the EOF is appropriately characterized as White, a finding of low to moderate safety significance. In this case, the large number of occurrences and durations in which the EOF was non-functional, in part due to habitability concerns related to the potential for elevated temperature and CO_2 concentration levels, the failure to assess the impact of out-of-service equipment and maintenance, and the lack of procedural guidance and recognition of the need for compensatory measures available to the Emergency Response Organization (ERO) members to operate the system, collectively resulted in an NRC conclusion that the EOF was inadequately maintained to the extent that some key ERO members could not have performed their assigned emergency plan functions. These occurrences indicate a lack of adequate control over maintenance of equipment that would have significantly impacted your staff's ability to respond to a radiological emergency. Furthermore, your emergency preparedness staff and ERO members were unaware of these occurrences.

The NRC staff determined that this finding has a cross-cutting aspect in the Corrective Action Program component of the Problem Identification and Resolution area, because CP&L did not identify the issues completely, accurately, and in a timely manner commensurate with their safety significance. Specifically, CP&L did not properly classify, prioritize, or evaluate operability and reportability of the non-functional EOF [P.1(c)].

The NRC also has determined that the finding involving the failure to maintain a fully functional EOF on several occasions is a violation of 10 CFR 50.54(q), 10 CFR 50.47(b)(8), and 10 CFR 50, Appendix E, Section IV.E.8 (2011 version). The violation is cited in the enclosed Notice of Violation (Notice) and the circumstances surrounding it are described in detail in IR 05000400/2012007. In accordance with the NRC Enforcement Policy, the Notice is considered escalated enforcement action because it is associated with a White finding.

You have 30 calendar days from the date of this letter to appeal the staff's significance determination for the White finding or the Notice of Violation associated with this finding. An appeal of the White finding will be considered to have merit only if it meets the criteria given in NRC Inspection Manual Chapter 0609, Attachment 2. An appeal must be sent in writing to the Regional Administrator, Region II, U.S. Nuclear Regulatory Commission, 245 Peachtree Center Avenue, Suite 1200, Atlanta, GA 30303-1257.

Regarding the second preliminary White finding and AV involving the TSC, the NRC has concluded that this finding should be characterized as a minor issue. In summary, CP&L agreed that at the time of the inspection, there was a lack of experimental and empirical data to support the in-leakage assumption of 60 CFM used in the alternate source term (AST) habitability calculations for the TSC. In response to the preliminary inspection finding, on July 11, 2012, CP&L conducted a tracer gas test on the TSC envelope in order to quantify

unfiltered air in-leakage. Additionally, the NRC reviewed your test methodology, data, analysis and results. When the TSC envelope was tested, the resulting data demonstrated that habitability for the facility would be maintained with the test results indicating a maximum of 48 cubic feet per minute (CFM) in-leakage which was less than the 60 CFM in-leakage stated in the AST habitability calculations. Based on the above, the NRC concluded that the Harris facility adequately maintained its TSC as required by 10 CFR 50.47(b)(8), and that this matter does not represent a violation of regulatory requirements.

The third AV involved the failure to report a major loss of emergency assessment capability to the NRC within 8 hours as required by 10 CFR 50.72(b)(3)(xiii). Based on the information developed during the inspection and the information provided at the pre-decisional enforcement conference, the NRC has concluded that a violation of NRC requirements occurred. Specifically, the NRC determined that the EOF facility was not functional or adequately maintained, and therefore was required to be reported in accordance with 10 CFR 50.72 (b)(3)(xiii). The violation, the significance of which was evaluated using the NRC's traditional enforcement process, is cited in the enclosed Notice and the circumstances surrounding it are described in detail in IR 05000400/2012007. In this case, the NRC concluded that on several occasions between August 4, 2009, and November 9, 2011, the licensee failed to report an occurrence of a major loss of emergency assessment capability.

As discussed in the Enforcement Policy, the severity level of a violation involving the failure to make a required report to the NRC will be based upon the significance of and the circumstances surrounding the matter that should have been reported. In this case, and as discussed above, the NRC concluded that the failure to provide the required report is associated with a White finding for CP&L's failure to maintain a fully functional EOF. In addition, CP&L's failure to report the condition of the EOF between August 4, 2009, and November 9, 2011, as required by 10 CFR 50.72, impeded the NRC's regulatory process. Had CP&L reported the incident as required, NRC review and follow-up inspection likely would have occurred, which may have prompted CP&L to adopt compensatory measures and/or corrective actions, thereby precluding further incidents after August 4, 2009. Based on the above, the NRC has concluded that the violation of 10 CFR 50.72 is appropriately characterized at Severity Level III, in accordance with the NRC Enforcement Policy.

Because your facility has not been the subject of escalated enforcement actions within the last two years, the NRC considered whether credit was warranted for Corrective Action in accordance with the civil penalty assessment process in Section 2.3.4 of the Enforcement Policy. In response to the inspection findings of June 2012, Harris staff promptly initiated a review of its reportability procedure for Emergency Response Facilities, conducted an extent of condition review of past instances in which its emergency response facility may not have been maintained adequate, and included the reportability aspect as part of an overall Root Cause Analysis for its emergency response facilities. Your Root Cause Analysis concluded that the cause of the reportability issues could be attributed, in part, to incorrect guidance in the site's reportability procedure, which allowed taking credit for alternate emergency facilities rather than reporting a non-functional emergency facility. Based on this review, you revised the procedure for reportability by specifically incorporating the reportability requirements of NUREG 1022 related to emergency response facilities, and reported to the NRC additional instances in which you determined that the emergency response facilities were not adequately maintained. The NRC notes, however, that the results of your extent of condition review regarding additional reportability instances did not fully coincide with all examples identified by the NRC. Based on

the promptness of corrective actions, the procedural revision and the Root Cause Analysis, the NRC has concluded that, credit is warranted for the factor of Corrective Action.

Therefore, to encourage prompt and comprehensive correction of violations, and in recognition of the absence of previous escalated enforcement action, I have been authorized, after consultation with the Director, Office of Enforcement, to propose that a civil penalty not be assessed in this case. However, significant violations in the future could result in a civil penalty.

You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. If you have additional information that you believe the NRC should consider, you may provide it in your response to the Notice. The NRC review of your response to the Notice will also determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

For administrative purposes, this letter is issued as a separate NRC Inspection Report, No. 05000400/2012010. Accordingly, AVs 05000400/2012007-01, 05000400/2012007-02, and 05000400/2012007-04 are updated consistent with the regulatory positions described in this letter. Therefore AV 05000400/2012007-01, Failure to Maintain an Adequate EOF to Support Emergency Response is updated as VIO 05000400/2012007-01 with a safety significance of White and a crosscutting aspect in the area Problem Identification and Resolution, P.1.(c). Apparent violation 05000400/2012007-02, Failure to Notify the NRC of the EOF Loss of Emergency Assessment Capability, is updated as VIO 05000400/2012007-02, Severity Level III, with no cross-cutting aspect. Apparent violation 05000400/2012007-04, Failure to Maintain an Adequate TSC to Support Emergency Response, is updated as a minor issue and closed.

The NRC determined the performance of Shearon Harris Nuclear Power Plant to be in the Regulatory Response Column of the Reactor Oversight Process Action Matrix as of the second quarter of calendar year 2012. Therefore, the NRC plans to conduct a supplemental inspection in accordance with Inspection Procedure 95001, “Supplemental Inspection for One or Two White Inputs in a Strategic Performance Area,” to provide assurance that the root causes and contributing causes of risk-significant performance issues are understood, that the extent of cause is identified, and that your corrective action for risk-significant performance issues are sufficient to address the root and contributing causes and prevent recurrence. The NRC requests that your staff provide notification of your readiness for the NRC to conduct a supplemental inspection to review the actions taken to address the White inspection finding.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response, will be made available electronically for public inspection in the NRC Public Document Room or from the NRC’s document system (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction.

Should you have any questions concerning this letter, please contact Mr. Randy Musser at (404) 997-4603.

Sincerely,

/RA/

Victor M. McCree
Regional Administrator

Docket No.: 50-400
License No.: NPF-63

Enclosure: Notice of Violation

cc w/encl.: (See page 7)

Should you have any questions concerning this letter, please contact Mr. Randy Musser at (404) 997-4603.

Sincerely,

/RA/

Victor M. McCree
Regional Administrator

Docket No.: 50-400
License No.: NPF-63

Enclosure: Notice of Violation

cc w/encl.: (See page 7)

■ PUBLICLY AVAILABLE □ NON-PUBLICLY AVAILABLE □ SENSITIVE ■ NON-SENSITIVE

ADAMS: ■ Yes ACCESSION NUMBER:_____ ■ SUNSI REVIEW COMPLETE ■ FORM 665 ATTACHED

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NAME	JDodson	JAustin	PLessard	JWorosilo	RMusser	RCroteau	BKlukan	LCasey
DATE	10/1/2012	10/2/2012	10/1/2012	10/1/2012	10/1/2012	10/1/2012	10/1/2012	09/27/2012
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES N
OFFICE	HQ:NRR	HQ:NSIR	RII:DRS	RII:DRA	RII:RA			
SIGNATURE	By email	By email	By email	LDW /RA/	VMM /RA/			
NAME	R Franovich	M Thaggard	HChristensen	LWert	VMcree			
DATE	09/24/2012	09/24/2012	10/2/2012	10/02/2012	10/03/2012			
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Letter to George Hamrick from Victor M. McCree dated October 3, 2012.

SUBJECT: SHEARON HARRIS NUCLEAR POWER PLANT - FINAL SIGNIFICANCE DETERMINATION OF A WHITE FINDING, NOTICE OF VIOLATION, AND ASSESSMENT FOLLOW-UP LETTER (NRC INSPECTION REPORT 05000400/2012010)

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NOTICE OF VIOLATION

Carolina Power and Light Company
Shearon Harris Nuclear Power Plant

Docket No. 50-400
License No. NPF-63
EA-12-132

During an NRC inspection completed on June 20, 2012, two violations of NRC requirements were identified. In accordance with the NRC Enforcement Policy, the violations are listed below:

A. 10 CFR 50.54(q) requires, in part, that a licensee authorized to operate a nuclear power reactor shall follow and maintain in effect emergency plans which meet the standards of 10 CFR 50.47(b).

10 CFR 50.47(b)(8) requires that adequate emergency facilities and equipment to support the emergency response are provided and maintained.

10 CFR 50, Appendix E, Section IV.E.8 (2011 version) states, in part, that the emergency facilities shall include licensee onsite technical support center and an emergency operations facility from which effective direction can be given and effective control can be exercised during an emergency.

The Harris Nuclear Plant Emergency Plan, Section 3.1, revision 57, states in part that adequate emergency facilities, communications, and equipment to support emergency response are provided and maintained.

Contrary to the above, on several occasions between August 4, 2009, and November 9, 2011, the licensee failed to maintain adequate emergency facilities and equipment to support emergency response. Specifically, the Emergency Operations Facility (EOF) normal and emergency ventilation system was in a degraded state and/or removed from service, for extended periods of time.

This violation is associated with a White SDP finding.

B. 10 CFR 50.72(b)(3)(xiii) states that a licensee shall notify the NRC as soon as practical and in all cases within eight hours of the occurrence of any event that results in a major loss of emergency assessment capability, offsite response capability, or offsite communications capability (e.g., significant portion of control room indication, Emergency Notification System, or offsite notification system).

Contrary to the above, on several occasions between August 4, 2009, and November 9, 2011, the licensee failed to notify the NRC within eight hours of the occurrence of a major loss of emergency assessment capability. Specifically, the licensee failed to report that the EOF normal and emergency ventilation system was in a degraded state, and/or removed from service, for extended periods of time when portions of the ventilation system were undergoing repairs, testing and maintenance, without compensatory measures.

This is a Severity Level III violation (Enforcement Policy paragraph 6.6).

Pursuant to the provisions of 10 CFR 2.201, Carolina Power and Light Company is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001 with a copy to the Regional Administrator, Region 2, and a copy to the NRC Resident Inspector at the facility that is the subject of this Notice, within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation; EA-12-132" and should include for each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation or severity level, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken, and (4) the date when full compliance will be achieved. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice, an order or a Demand for Information may be issued as to why the license should not be modified, suspended, or revoked, or why such other action as may be proper should not be taken. Where good cause is shown, consideration will be given to extending the response time.

If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

Because your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html, to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days of receipt.

Dated this 3rd day of October 2012