Progress Energy

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U.S. Nuclear Regulatory Commission
ATTENTION: Document Control Desk
Washington, DC 20555

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400/RENEWED LICENSE NO. NPF-63
NINE-MONTH SUPPLEMENTAL (POST-OUTAGE) RESPONSE TO NRC GENERIC LETTER 2008-01, "MANAGING GAS ACCUMULATION IN EMERGENCY CORE COOLING, DECAY HEAT REMOVAL, AND CONTAINMENT SPRAY SYSTEMS"

References:
1. NRC Generic Letter 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems," dated January 11, 2008 (ML072910759)

2. Letter from R. J. Duncan to the Nuclear Regulatory Commission (Serial: HNP-08-047), "Three Month Response to NRC Generic Letter 2008-01, 'Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems,'" dated May 09, 2008 (ML081360497)

3. Letter from M. G. Vaaler, Nuclear Regulatory Commission, to C. L. Burton, "Shearon Harris Nuclear Power Plant, Unit 1 – Generic Letter 2008-01, 'Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems,' Proposed Alternative Course of Action," dated August 08, 2008 (ML082110423)

4. Letter from C. L. Burton to the Nuclear Regulatory Commission (Serial: HNP-08-098), "Nine-Month Response to NRC Generic Letter 2008-01, 'Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems,'" dated October 14, 2008 (ML082910295)

Ladies and Gentlemen:

On January 11, 2008, the Nuclear Regulatory Commission (NRC) issued Generic Letter (GL) 2008-01 (Reference 1), requesting that each licensee evaluate the licensing basis, design, testing, and corrective action programs for the Emergency Core Cooling Systems (ECCS), Residual Heat Removal (RHR) system and Containment Spray (CS) system, to ensure that

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gas accumulation is maintained less than the amount that challenges operability of these systems, and that appropriate action is taken when conditions adverse to quality are identified.

As provided in Harris Nuclear Plant's (HNP) three-month response to GL 2008-01 (Reference 2), Carolina Power & Light Company, now doing business as Progress Energy Carolinas, Inc. (PEC), committed that HNP would complete detailed walkdowns and ultrasonic examinations of inaccessible piping at locations potentially susceptible to gas accumulation for systems within the scope of GL 2008-01. As approved by the NRC (Reference 3), this alternative course of action included the submittal of a GL 2008-01 post-outage supplemental response, describing any changes to the nine-month response (Reference 4) resulting from walkdowns and any necessary ultrasonic examination of inaccessible HNP piping, to the NRC within 90 days following the completion of Refueling Outage 15 (RFO-15).

Accordingly, the Attachment to this letter contains HNP's post-outage supplemental response, submitted within 90 days of startup from RFO-15, the outage in which the deferred actions were completed. This supplemental response also confirms the long-term GL 2008-01 activities that remain to be completed as previously identified in the NRC's acceptance of HNP's alternative course of action (Reference 3).

In summary, Carolina Power & Light Company, now doing business as Progress Energy Carolinas, Inc. (PEC), has concluded that the subject systems at HNP are operable and that HNP is currently in compliance with the licensing basis documentation and applicable regulations, including 10 CFR 50 Appendix B, Criteria III, V, XI, XVI, and XVII, with regard to the concerns outlined in GL 2008-01 regarding managing gas accumulations in these systems/functions.

No new regulatory commitments are contained in this submittal.

In addition, this submittal completes the following NRC commitments contained in HNP's three-month GL 2008-01 response (Reference 2):

1. *HNP will complete detailed walkdowns and ultrasonic examinations of inaccessible piping at locations potentially susceptible to gas accumulation for systems within the scope of GL 2008-01 prior to startup from the next refueling outage (RFO-15).*

2. *HNP will submit a supplemental response to GL 2008-01 to the NRC within 90 days following the completion of the HNP RFO-15. This supplemental response will describe any changes to the nine-month response resulting from walkdowns and any necessary ultrasonic examination of inaccessible HNP piping.*

Please refer any questions regarding this submittal to Mr. Dave Corlett, Supervisor – Licensing/Regulatory Programs, at (919) 362-3137.

I declare under penalty of perjury that the foregoing is true and correct. Executed on

AUG 1 0 2009

Sincerely,

John C. Warner

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Manager – Support Services
Harris Nuclear Plant

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Attachment: Nine-Month Supplemental (Post-Outage) Response to NRC Generic Letter 2008-01

cc: Mr. J. D. Austin, NRC Senior Resident Inspector, HNP
Mr. L. A. Reyes, NRC Regional Administrator, Region II
Ms. M. G. Vaaler, NRR Project Manager, HNP

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
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RESPONSE TO NRC GENERIC LETTER 2008-01

Harris Nuclear Plant's (HNP) Refueling Outage 15 (RFO-15) was completed on May 10, 2009. During this outage, as committed to in Reference 2 of the cover letter, Carolina Power & Light Company (CP&L), now doing business as Progress Energy Carolinas, Inc. (PEC) completed detailed walkdowns and necessary ultrasonic examinations of inaccessible piping at locations potentially susceptible to gas accumulation for systems within the scope of Generic Letter (GL) 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems."

Based on completion of these activities, this submittal provides HNP's Nine-Month Supplemental (Post Outage) Response to GL 2008-01 for actions that were deferred until the next refueling outage as approved by the NRC in Reference 3 of the cover letter. The following information is provided in this attachment:

A description of the results of evaluations that were performed on the previously identified incomplete activities in accordance with GL 2008-01, such as system piping walkdowns, at Harris Nuclear Plant (Section A of this attachment).

A description of any additional corrective actions determined necessary to assure system operability and compliance with the quality assurance criteria in Sections III, V, XI, XVI, and XVII of Appendix B to 10 CFR Part 50 and the licensing basis and operating license with respect to the subject systems, including a schedule and a basis for that schedule (Section B1 of this Attachment). Also included is a summary of any changes or updates to previous corrective actions, including any schedule changes and basis for the change (Section B2 of this Attachment).

Since the remaining conclusions documented in HNP's nine-month response have not changed, this submittal only addresses the results of reviews conducted during the recent refueling outage for activities identified as previously uncompleted.

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RESPONSE TO NRC GENERIC LETTER 2008-01

A. EVALUATION RESULTS

1. Design Basis Documents

HNP has not identified any additional changes in design basis documents required to meet GL 2008-01 criteria subsequent to the GL 2008-01 nine-month response dated October 14, 2008.

HNP's nine-month response (Serial: HNP-08-098, Attachment 2, Item 4) contained a commitment that HNP Design Basis Documents (DBDs) would be revised to include a discussion of the design features for each system that minimize vortexing of the ECCS and CS system pumps during the injection and recirculation phase. These revisions to DBD-104 and DBD-106 were completed by January 29, 2009.

2. Confirmatory Walkdowns

HNP's three-month response to GL 2008-01 (Serial: HNP-08-047) contained a commitment that detailed walkdowns of inaccessible piping at locations potentially susceptible to gas accumulations for systems within the scope of GL 2008-01 would be completed prior to startup from RFO-15. Piping system walkdowns were performed during RFO-15 for the low head safety injection, high head safety injection, containment spray and residual heat removal systems. These inspections of the normally inaccessible piping were completed prior to May 10, 2009, and the piping was confirmed to be routed as shown on plant design drawings.

Selected "as-found" ultrasonic test points were identified for the Low Head Safety Injection (LHSI), High Head Safety Injection (HHSI) and Residual Heat Removal (RHR) systems. Since HNP's Containment Spray (CS) system piping is maintained dry inside the containment building, it did not require ultrasonic testing. Ultrasonic tests were performed at certain locations prior to placing the applicable system in-service for plant cooldown and/or scheduled surveillance testing. These "as-found" ultrasonic tests did not result in identification of any gas voids. Furthermore, sufficient data was obtained from these tests to conclude that there were no voids capable of challenging system operability in the low head or high head injection piping inside containment.

The next series of ultrasonic tests were performed as post-maintenance activities, following completion of work on portions of the LHSI, HHSI, RHR and CS systems. The results of these ultrasonic tests provide reasonable assurance that HNP's operating procedures have adequate guidance to fill and vent the identified systems following maintenance activities. The instances of discovery of gas voids within portions of the LHSI, HHSI and CS systems were evaluated by Engineering for determination of the

necessary actions needed to remove the remaining gas. In all cases, the voids were removed by performing additional system venting, as verified by successful completion of additional ultrasonic tests.

Final ultrasonic tests were performed during the ascending plant mode changes when each system is required to be operable. No gas voids were discovered during this series of ultrasonic tests on the LHSI, HHSI, RHR and CS systems. On separate tests, two small gas voids discovered on the Chemical and Volume Control System were evaluated by plant Engineering as acceptable. Subsequent monitoring using ultrasonic testing determined that these two voids were dissipated completely through normal system operation with no impact on system operability.

3. Vent Valves

Based on the results of piping confirmatory walkdowns and the ultrasonic tests performed during RFO-15, HNP does not require the addition of any new vent valves. However, if system monitoring and evaluation identifies a need, the future installation of additional vent valves will be considered.

HNP's nine-month response (Reference 4) contains a commitment to add a vent valve on the Spray Additive System tank outlet pipe. Reference Section B2h of this Attachment for a status update.

4. Procedures

Subsequent to HNP's submittal of its nine-month response letter dated October 14, 2008 (Reference 4), the following procedure has been identified as requiring revision to incorporate information learned during RFO-15:

Engineering Surveillance Test EST-212, "Type C Local Leak Rate Tests"

B. DESCRIPTION OF NECESSARY ADDITIONAL CORRECTIVE ACTIONS

1. Additional Corrective Actions

As noted above, subsequent to HNP's submittal of its nine-month response letter dated October 14, 2008 (Reference 4), the following additional Corrective Action has been identified:

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Revise Engineering Surveillance Test EST-212, "Type C Local Leak Rate Tests", the plant surveillance procedure used for local leak rate testing of the containment spray system, to incorporate the lessons learned during RFO-15.

This procedure change will be completed before the next scheduled refueling outage (Fall 2010) or performance of the surveillance test.

2. Corrective Action Updates

The corrective actions identified in HNP's nine-month response letter dated October 14, 2008 (Reference 4), are repeated below for clarity. Included is the status of each at the completion of RFO-15:

a. Walkdowns of inaccessible piping in containment

Scope: HNP will complete detailed walkdowns and ultrasonic examinations of inaccessible piping at locations potentially susceptible to gas accumulation for systems within the scope of Generic Letter (GL) 2008-01 prior to startup from the next refueling outage (RFO-15). This action will be completed prior to startup from RFO-15, scheduled to begin in April 2009. This item was identified as Commitment 1 in HNP's three-month response to GL 2008-01 (Reference 2).

Status: Complete. This response letter satisfies this commitment.

b. Revise operating procedures used for system fill and vent

Scope: Revise operating procedures used for ECCS and CS fill and vent. This will include enhancements to perform engineering reviews of the system fill and vent methods during planning and confirmatory UT inspections following maintenance. The guidance of the operating procedures is adequate for the interim period while these revisions are processed. This action will be completed by 04/18/09 or prior to first use. This item was identified as Commitment 1 in HNP's nine-month response to GL 2008-01 (Reference 4).

Status: Complete. This response letter satisfies this commitment.

c. Revise the plant post-maintenance testing procedure

Scope: Revise HNP post-maintenance testing (PMT) procedure (PLP-400) to ensure appropriate confirmatory UT inspections are performed following maintenance activities that require piping to be drained. This action will be completed by 01/29/09 or prior to first use. This item was identified as

Commitment 2 in HNP's nine-month response to GL 2008-01 (Reference 4).

Status: Complete. This response letter satisfies this commitment.

d. Revise the plant periodic venting surveillance procedure

Scope: The plant surveillance procedure (OST-1107) will be revised to include a requirement to secure the venting process, to notify the SSO and to initiate an NCR in the event air or gas is detected during venting. This revision will include instructions to perform UT in the event of air/gas and to route the results to the system engineer for trending purposes. A prerequisite will be added to verify that UT inspections have been performed at selected locations prior to the periodic venting. Until specific criterion are developed for HNP systems and, in the absence of system- or location-specific acceptance criteria, the proposed interim standard for ECCS and CS system gas voids will be no air and/or gas allowed. This action will be completed by 12/18/08. This item was identified as Commitment 3 in HNP's nine-month response to GL 2008-01 (Reference 4).

Status: Complete. This response letter satisfies this commitment.

e. Revise the plant Design Basis Documents

Scope: Revise HNP Design Basis Documents to include a discussion of the design features for each system that minimize vortexing of the ECCS and CS system pumps during the injection and recirculation phase. This action will be completed by 01/29/09. This item was identified as Commitment 4 in HNP's nine-month response to GL 2008-01 (Reference 4).

Status: Complete. This response letter satisfies this commitment.

f. Revise the plant PM for periodic ECCS ultrasonic (UT) inspections

Scope: Revise/Develop HNP PM Program to include a requirement for periodic verification using UT that the HHSI, LHSI and CS system pump discharge and suction piping high points and other potential gas accumulation locations are maintained sufficiently full.

- ECCS (revise existing PM)
- CS (develop new PM)

This action will be completed by 12/19/08. This item was identified as Commitment 5 in HNP's nine-month response to GL 2008-01 (Reference 4).

Status: Complete. This response letter satisfies this commitment.

g. Install one new vent valve

Scope: Install one vent valve on the Spray Additive System tank outlet pipe (not required to maintain operability). This action will be completed prior to or during RFO16 (November 2010). This item was identified as Commitment 6 in HNP's nine-month response to GL 2008-01 (Reference 4).

Status: This corrective action is in progress. The scheduled completion date is unchanged.

h. Evaluate TSTF related to potential for unacceptable gas accumulation for applicability to HNP

Scope: Evaluate forthcoming TSTF Traveler concerning new/modified TS requirements on gas intrusion for applicability to HNP. If determined applicable to HNP, submit a License Amendment Request (LAR) incorporating TS changes identified in the TSTF Traveler to the NRC. This LAR will be submitted to the NRC within nine months of the NRC's approval of the TSTF Traveler. This item was identified as Commitment 7 in HNP's nine-month response to GL 2008-01 (Reference 4).

Status: This corrective action is in progress. The scheduled completion date is unchanged.

C. Conclusion

HNP has completed the evaluation of the previously inaccessible portions of the applicable systems at HNP that perform the functions described in GL 2008-01 and has concluded that these systems are Operable, as defined in the HNP Technical Specifications.