

August 21, 2007

LICENSEE: Carolina Power & Light Company

FACILITY: Shearon Harris Nuclear Power Plant, Unit 1

SUBJECT: SUMMARY OF TELEPHONE CONFERENCE CALL HELD ON JULY 19, 2007,
BETWEEN THE U.S. NUCLEAR REGULATORY COMMISSION AND CAROLINA
POWER & LIGHT COMPANY, CONCERNING DRAFT REQUESTS FOR
ADDITIONAL INFORMATION PERTAINING TO THE SHEARON HARRIS
NUCLEAR POWER PLANT, UNIT 1, LICENSE RENEWAL APPLICATION

The U.S. Nuclear Regulatory Commission (NRC or the staff) and representatives of Carolina Power & Light Company held a telephone conference call on July 19, 2007, to discuss and clarify the staff's draft requests for additional information (D-RAIs) concerning the Shearon Harris Nuclear Power Plant, Unit 1, license renewal application. The telephone conference call was useful in clarifying the intent of the staff's D-RAIs.

Enclosure 1 provides a listing of the participants and Enclosure 2 contains a listing of the D-RAIs discussed with the applicant, including a brief description on the status of the items.

The applicant had an opportunity to comment on this summary.

/RA/

Maurice Heath, Project Manager
License Renewal Branch A
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket No. 50-400

Enclosures:
As stated

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**TELEPHONE CONFERENCE CALL
SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1
LICENSE RENEWAL APPLICATION**

LIST OF PARTICIPANTS
JULY 19, 2007

PARTICIPANTS

Maurice Heath
Ganesh Cheruvenki
Chris Mallner
Joseph Terrell

AFFILIATIONS

U.S. Nuclear Regulatory Commission (NRC)
NRC
Progress Energy
Progress Energy

**DRAFT REQUESTS FOR ADDITIONAL INFORMATION
SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1
LICENSE RENEWAL APPLICATION**

JULY 19, 2007

The U.S. Nuclear Regulatory Commission (NRC or the staff) and representatives of Carolina Power & Light Company held a telephone conference call on July 19, 2007, to discuss and clarify the following draft requests for additional information (D-RAIs) concerning the Shearon Harris Nuclear Power Plant (HNP), Unit 1 license renewal application (LRA).

D-RAI-B.2.17

- (A) The applicant states that the surveillance capsule that is to be withdrawn during the 16th refueling outage would have been exposed to a neutron fluence value that is equivalent to the peak reactor pressure vessel (RPV) fluence at 55 effective full power year (EFPY). Please confirm this statement. The staff requests that the applicant provide the following information related to this test:
- (1) Lead factor of the surveillance capsule
 - (2) Identification number of the capsule, and
 - (3) Heat number of the surveillance material in the capsule
- (B) Program element 6, item 2 of aging management program (AMP) B.2.17 states that the applicant intends to test one surveillance capsule after the 16th refueling outage. The staff requests that the applicant submit the following information that pertains to the test:
- (1) The projected refueling outage of withdrawal
 - (2) Projected capsule neutron fluence value at the time of withdrawal
 - (3) Corresponding EFPY for the peak RPV fluence to equal the capsule fluence
 - (4) The identification number of the capsule, and
 - (5) Heat number of the surveillance material in the capsule
- (C) The staff requests that the applicant confirm that the withdrawal schedule of the final two capsules for the extended period of operation is consistent with the requirements, specifically the limitations on lead factor, specified in paragraph 7.6.2 of the American Society of Testing Materials E 185 (ASTM E 185), "Conducting Surveillance Tests for Light-Water Cooled Nuclear Power Reactor Vessels."
- (D) Section 5.3.1.6 of the final safety analysis report states that the applicant intends to use two standby capsules with identifications Y and Z for future tests. However, the "operating experience" Section of AMP B.2.17 indicates that three capsules will remain in the RPV for future tests to manage neutron embrittlement during the extended period of operation. The staff requests that the applicant provide an explanation for this inconsistency.

(E) The staff requests that the applicant include the following statements in the commitment table of the LRA:

- (1) The applicant will notify the staff if there is any change in the withdrawal schedules of the surveillance capsules.
- (2) If a standby capsule is removed from the RPV without the intent to test it, the capsule will be stored in a manner which maintains it in a condition which would permit its future use, including during the period of extended operation, if necessary.

Discussion: The applicant indicated that the question is clear. This D-RAI will be sent as a formal RAI

D-RAI-4.2.3 (Editorial Correction)

In Tables 4.2-2 and 4.2-3 of the LRA, the chemical composition values of elements Copper and Nickel for the surveillance capsule test sample representing the intermediate shell plate (heat number-B4197-2) and the RPV's intermediate shell plate (heat number-B4197-2) are identical. However, the chemistry factors are different. The staff requests that the applicant add a footnote stating that the chemistry factor for the surveillance capsule test sample representing the intermediate shell plate is derived from the surveillance test data.

Discussion: The applicant indicated that the question is clear. This D-RAI will be sent as a formal RAI

D-RAI-4.2.4

The staff requests that the applicant include the following items in Section 4.2.4 of the LRA:

- (A) The current pressure-temperature (P-T) limits are valid through 36 EFY. The P-T limits for the extended period of operation will be managed by using approved fluence calculations when there are changes in power of core design in conjunction with surveillance capsule results.
- (B) Any change in P-T curves will be implemented by the license amendment process (i.e., modifications of technical specifications) and will meet the requirements of Title 10 of the *Code of Federal Regulations* Section 50.60 (10 CFR 50.60) and 10 CFR Part 50, Appendix G.

Discussion: The applicant indicated that the question is clear. This D-RAI will be sent as a formal RAI

D-RAI-4.2.5

Since the P-T limits for the extended period of operation are not yet developed, the applicant should make a statement in the LRA that they will submit the appropriate analysis for the low

temperature overpressure (LTOP) setpoints that will be valid for the license renewal period. Any change in the LTOP setpoints will be implemented by the license amendment process (i.e., modifications of technical specifications) and will meet the requirements of 10 CFR 50.60 and 10 CFR Part 50, Appendix G.

Discussion: The applicant indicated that the question is clear. This D-RAI will be sent as a formal RAI

D-RAI-4.2.6

During the audit at the HNP, the staff was informed by the applicant that one reactor vessel nozzle was projected to achieve a neutron fluence greater than 1×10^{17} n/cm² (E > 1 MeV) at the end of the extended period of operation. This nozzle material was not listed in Tables 4.2-1, 4.2-2 and 4.2-3 of the LRA. According to Table 1V A-2 of NUREG-1801, Revision 1, ferritic materials are subject to neutron embrittlement when they are exposed to neutron fluence greater than 1×10^{17} n/cm² (E > 1 MeV) at the end of the extended period of operation. Therefore, the staff requests that the applicant provide the following for this nozzle material and its associated welds:

- (1) The RT_{PTS} value of the nozzle material and its associated welds per the requirements of Title 10 CFR 50.61.
- (2) The adjusted reference temperature value of the nozzle material and its associated welds that will be used for developing pressure-temperature limits per the requirements of 10 CFR Part 50, Appendix G.
- (3) The upper shelf energy value of the nozzle material and its associated welds per the requirements of 10 CFR Part 50, Appendix G.

Discussion: The applicant indicated that the question is clear. This D-RAI will be sent as a formal RAI

Letter to Carolina Power & Light Company, from M. Heath, dated August 21, 2007

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