April 12, 2007

LICENSEE: Carolina Power & Light Company

FACILITY: Shearon Harris Nuclear Power Plant, Unit 1

SUBJECT: SUMMARY OF TELEPHONE CONFERENCE CALL HELD ON MARCH 27, 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 March 27, 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.

/RA/
Samuel Hernández, Environmental Project Manager
Environmental Branch B
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket No. 50-400

Enclosures:
1. List of Participants
2. List of D-RAIs

cc w/encls: See next page

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LIST OF PARTICIPANTS FOR THE
TELEPHONE CONFERENCE CALL
SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1
LICENSE RENEWAL APPLICATION

March 27, 2007

PARTICIPANTS	AFFILIATIONS
Samuel Hernandez	U.S. Nuclear Regulatory Commission (NRC)
Robert Palla	NRC
Maurice Heath	NRC
Bruce Mrowca	Information Systems Laboratories (ISL)
Lauren Fleishman	ISL
Jan Kozyra	Progress Energy
Roger Stewart	Progress Energy
Robert Rishel	Progress Energy
Steve Mabe	Progress Energy
Jeff Gabor	Engineering & Research Inc. (ERIN)
Don McLeod	ERIN

DRAFT REQUESTS FOR ADDITIONAL INFORMATION
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 March 27, 2007, to discuss and clarify the following draft requests for additional information (D-RAIs) concerning the Shearon Harris Nuclear Power Plant, Unit 1, license renewal application (LRA).

After discussing the D-RAIs, the applicant indicated that all questions were clarified. All D-RAIs will be sent as a formal RAIs.

Draft -RAIs

1. Provide the following information regarding the Shearon Harris Nuclear Plant (HNP) Probabilistic Safety Assessment (PSA) used for the Severe Accident Mitigation Alternatives (SAMA) analysis, i.e., MOR2005:

    a. A description of the current reactor coolant pump (RCP) seals and the approach to modeling the seals within the Probabilistic Risk Assessment (PRA).

    b. An explanation why some of the initiating events shown in Table E.5-1 have a 1.0 probability value (e.g., %T12B: Loss of 6.9 KV Emergency Bus, 1B-SB, %T13 Loss of Instrument Air, etc.).

    c. A list of any changes to the plant (physical and/or procedural modifications) since the 2005 PSA update, either implemented or pending, and a discussion of their impact on the SAMA evaluation.

    d. A description of the quality controls (independent, peer reviews, configuration controls, etc.) that have been applied to the 2005 PSA update.

2. Describe the major changes to the Level 2 analysis subsequent to the Individual Plant Examination, including the changes alluded to in Section E.2.3 that were made as a result of the 4.5 percent power uprate, the steam generator replacement, and the peer certification comments.

3. Provide the following with regard to the treatment of external events in the SAMA analysis:

    a. Provide additional justification for the use of a factor of two multiplier to the internal event benefits to reflect the potential for additional risk reduction in external events. The Core Damage Frequency (CDF) for external events in the Environmental Report (ER) is actually 1.4 times higher than the internal events CDF. This would justify a multiplier of 2.4, rather than a multiplier of two.

    b. Justify that the Harris Fire PRA is conservative given the following information provided in the Fire Individual Plant Examination of External Events Technical Evaluation Report:

i. The estimate of the total fire CDF from unscreened fire areas is 1.1E-5/y, or 1.3E-5/y, aif the contribution from 1-A-4-COMB is included. The estimated CDF screened in the detailed analysis is 5.7E-6/y for the plant areas and compartments and 1.4E-5/y for the control room scenarios. If the screened values for the detailed analysis are summed with the unscreened values, the total CDF from fires is approximately 3.3E-5/y.

ii. The combined cable spreading room fire frequency is approximately 9.0E-4/y, which is less than one-third of the value in the Electric Power Research Institute Fire Events Database used in the referenced fire frequency data.

iii. For control room analysis, the frequency from plant-wide ignition sources was not included, i.e., cabinet fires were deemed to be the only significant fire ignition sources, and individual scenarios were screened from the analysis based on estimated core damage frequencies of <1.0E-6/y.

c. Discuss how each of the items listed in the Table on page E-48 specifically apply to the HNP Fire Model.

d. Provide the bases for the conjecture that the fire risk might be 85 percent of the total external events risk.

e. Describe the scope and application of the “Fire Re-Analysis” identified in Section E.5.1.6.

4. In Section E.3.3, it is stated that the core inventory used for the analysis was derived from the plant’s Final Safety Analysis Report, Table 15.0.9-1. Confirm that the resulting core inventory reflects the HNP-specific fuel burnup/management as the plant is expected to be operated during the renewal period (including the power uprate). If this is not the case, evaluate the impact on population dose and on the SAMA screening and dispositioning if the SAMA analysis were based on the fission product inventory for the highest burnup and fuel enrichment expected at HNP during the renewal period.

5. With regard to the MACCS2 analyses, Section E.3.5 states that meteorology data was collected from the HNP meteorological monitoring program, but does not indicate where this data was collected. Clarify where the data is collected, and describe the measures taken (e.g., interpolation, use of data from another source) to address any missing data.

6. Provide the following with regard to the Phase II cost-benefit evaluations:

a. For a number of the Phase II SAMAs listed in ER Section E.6, the information provided does not sufficiently describe the associated modifications and what is included in the cost estimate. Provide the following information regarding SAMA cost estimates:

i. A more detailed description of the modifications for Phase II SAMAs 2, 4, 8, 12, 13, 17 and 22. For SAMA 4, describe the supporting analysis that is included in the cost of implementation.

ii. For SAMAs 12 and 13, explain why the cost estimate for SAMA 12 is greater than that for SAMA 13, given that SAMA 13 includes an additional modification when compared to SAMA 12 (i.e., SAMA 13 has three modifications: the two modifications in SAMA 12, plus one more modification). It appears that the cost of SAMA 12 should be less than that of SAMA 13.

iii. The logic changes for valves in SAMA 15 are estimated to cost $250,000, while the logic changes to trip the nuclear service water pumps in SAMA 13 are only estimated to cost $75,000. Explain the difference in these two modifications to justify the cost difference.

iv. Describe how inflation is accounted for in the cost estimates.

b. For SAMA 1, explain what is meant by the statement in Section E.6.1.1 that the original OPER-66, Failure to Locally Operate Turbine-Driven Auxiliary Feedwater (TDAFW) Pump After Power Failure, is 1.2E-02. It appears, from Table E.5-1, that the current value is 1.0. Describe the current credit taken for local operation of the TDAFW Pump after power failure including indication used to control steam generator level. Provide a more complete bases for reducing the cutsets that include OPER-66 by only 50 percent. Explain the statement "This would impact the dependent [human-error probability] differently depending on how each one is calculated."

c. For SAMA 1 and 8, the fire cost risk is reduced by excluding the SGTR and interfacing-systems loss-of-coolant accident contributions from consideration. The reason provided is that "these accident types are not related to fire events in a measurable way ..." Given that the accident types between internal and external events are likely to be different in progression and consequences, some more severe and some less severe, justify the exclusion of these events from the cost risk when the total spectrum of fire release categories and frequencies has not been determined.

d. For SAMA 6, provide the basis for the 1.0E-02 failure probability that is assumed for the failure to mitigate flood scenarios 6 and 7 following SAMA implementation. Include a discussion of the available cues/indication, available time and the expected time it will take to complete the action.

e. For SAMA 8, the combined cost and benefit was provided for alternate seal cooling and direct feed to Transformer 1BS-SB. Provide the cost and benefit for alternate seal cooling only.

7. For certain SAMAs considered in the ER, there may be lower-cost alternatives that could achieve much of the risk reduction at a lower cost. In this regard, provide an evaluation of the costs and benefits for the following SAMAs, which appear to be viable at HNP:

a. Changes to procedures to re-open 1SW-274 and 1SW-275 in order to re-establish an ESW discharge pathway (a low cost alternative to SAMA 15, which involves logic changes).

b. Use of portable generator to provide DC power to TDAFW pump and selected instrumentation to extend the coping time in loss of alternating current power events (to power battery chargers only – exclude powering a hydrostatic test pump as done in SAMA 1). Ensure that the issue identified in RAI 6.b is fully addressed.

c. Installation of instrumentation for improved battery monitoring capability, especially for detection of open circuit faults while the bus is carried by the battery charger.

Note to Carolina Power & Light Company from Samuel Hernández dated April 12, 2007

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