June 13, 2001

Mr. James Scarola, Vice President
Shearon Harris Nuclear Power Plant
Carolina Power & Light Company
Post Office Box 165, Mail Code: Zone 1
New Hill, North Carolina 27562-0165

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION ON EMERGENCY DIESEL GENERATOR 24-HOUR RUN LICENSE AMENDMENT REQUEST - SHEARON HARRIS NUCLEAR POWER PLANT (SHNPP) (TAC NO. MB0781)

Dear Mr. Scarola:

By letter dated December 14, 2000, you submitted a license amendment request to conduct the emergency diesel generator 24-hour endurance run at power.

During the course of our review of this request, the NRC staff has determined that additional information is necessary to complete our review. The enclosed request for additional information was emailed to your licensing staff on May 30, 2001, and discussed during a conference call on June 5, 2001. A mutually agreeable target date of June 30, 2001, for your response was established. If circumstances result in the need to revise the target date, please call me at the earliest opportunity.

Sincerely,

/RA/

Richard J. Laufer, Project Manager, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-400

Enclosure: As stated

cc w/encl: See next page

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* See previous concurrence

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REQUEST FOR ADDITIONAL INFORMATION
LICENSE AMENDMENT REQUEST
SHEARON HARRIS TECHNICAL SPECIFICATION
SURVEILLANCE REQUIREMENT 4.8.1.1.2.f.7
24-HOUR EMERGENCY DIESEL GENERATOR (EDG) ENDURANCE RUN TEST

1. The December 14, 2000, amendment request states that the Harris Nuclear Plant (HNP) design of the EDG circuitry includes a direct trip of the EDG output breaker when an EDG is in the test mode and a loss of offsite power (LOOP) is detected by the LOOP relay, and a direct trip of the bus cross tie breaker on the detection of a LOOP. It states that this design provides the most direct indicator of a LOOP. A LOOP relay is typically an undervoltage relay that senses safety bus voltage. With an EDG under test connected to the safety bus in parallel with the offsite power source, an undervoltage on the offsite system will result in substantial current flow from the EDG as the EDG attempts to regulate the bus voltage. Such a situation could occur following a trip of the HNP EDG if it is providing voltage support to the grid. Please explain how the LOOP relay can prevent potential damage to the EDG from overcurrent following a low switchyard voltage. Also explain how the LOOP relay will actuate on a LOOP if the EDG is supporting the safety bus voltage.

2. The amendment request indicates that the HNP probabilistic safety analysis (PSA) model results are not affected by the EDG 24-hour run in any particular mode of operation because it is treated as available due to its ability to separate from the test mode. As indicated in the previous question and acknowledged in your submittal, a disturbance of the offsite power grid may result in the loss of the EDG. Conducting the test at power creates the potential that these grid disturbances (including the post-plant-trip switchyard undervoltage discussed above) could result in loss of the EDG during a grid-related operating transient when the EDGs might be needed. This risk potential for EDG unavailability should be evaluated, including the revised reliability impact on test and standby unavailability, considering the comparative reliability of the EDG in standby mode versus reconfiguration when in test in the HNP PSA and the results used to support this amendment. Additionally, the change in core damage frequency (Δ CDF) and large early release frequency (ΔLERF) (Regulatory Guide (RG) 1.174) as well as the incremental conditional core damage probability (ICCDP) and the incremental conditional large early release probability (ICLERP) (RG 1.177) should be evaluated considering the proposed new test mode.

cc:

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