March 5, 2001

MEMORANDUM TO: Rich Correia, Section Chief
Project Directorate II
Division of Licensing Project management

FROM: Cornelius F. Holden, Section Chief ***(/RA by CFHolden)***
Electrical Engineering Section
Electrical and Instrumentation & Controls Branch
Division of Engineering

SUBJECT: SHEARON HARRIS - REACTOR THERMAL POWER UPRATE
(TAC NO. MB0782)

Carolina Power & Light Company (licensee) recently submitted proposed Technical Specification (TS) changes for the steam generator replacement at Harris Nuclear Plant (HNP). The analyses and evaluations performed for the replacement of the steam generator also supported the proposed power uprate, because most of the analyses and evaluations were performed at the uprated core level of 2900 megawatts thermal (MWt). By letter dated December 14, 2000, the licensee proposed to amend the HNP to allow plant operation at an uprated reactor core power level of 2900 MWt (998 MW electrical). The amendment would increase the thermal power by 4.5 percent.

4+5

[redacted]

This completes action of TAC No. ~~MA7813~~ MB0782.

Attachment: Safety Evaluation

CONTACT: N. Trehan, NRR/EEIB
415-2777

[redacted]

C/)

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This completes action of TAC No. MA7813.

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DATE	03/05/01	03/05/01	03/05/01

OFFICIAL RECORD COPY

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
REACTOR THERMAL POWER UPRATE
CAROLINA POWER & LIGHT COMPANY
SHEARON HARRIS NUCLEAR POWER PLANT
DOCKET NO. 50-400

1.0 INTRODUCTION

Carolina Power & Light Company (licensee) recently submitted proposed Technical Specification (TS) changes for steam generator replacement at Harris Nuclear Plant (HNP). The analyses and evaluations performed to support the TS changes associated with steam generator replacement also support the proposed power uprate, because most of the analyses and evaluations were performed at the uprated core level of 2900 megawatts thermal (MWt). By letter dated December 14, 2000, the licensee proposed to amend the HNP to allow plant operation at an uprated reactor core power level of 2900 MWt (998 MW electrical). The amendment would increase the thermal power by 4.5 percent.

2.0 BACKGROUND

The 230 kV switchyard utilizes breaker-and-a-half and double breaker schemes. The unit is connected in a double-breaker scheme. The switchyard is provided with two independent 125 Vdc systems to furnish the control power for the circuit breakers. The supply for preferred (offsite) power is the 230 kV system. Seven 230 kV transmission lines connect to the transmission network. Each of the switchyard two 230 kV buses is a source of preferred power to the Unit. The Isolated Phase Bus is designed to deliver power from the generator terminals to the three single-phase transformers and is connected wye on the high voltage side and delta on the low voltage side.

The onsite electrical distribution system provides ac or dc power to plant electrical loads at various voltage levels. The onsite ac power distribution system receives power under normal operating conditions through the unit auxiliary transformers. Under startup and shutdown conditions, power is supplied through startup transformers. Four non-safety related 6.9 kV switchgear buses (1A, 1B, 1D, and 1E) provide power from these transformers to the onsite electrical power distribution system. Switchgear buses 1D and 1E provide power to two independent safety-related switchgear buses, which provide power to the redundant safety related electrical loads. Should the offsite power to these safety related buses be unavailable, two emergency diesel generators supply onsite power to the safety related buses. The electrical distribution system has been previously evaluated to conform to 10 CFR 50 Appendix A General Design Criteria 17.

3.0 EVALUATION

Following is the evaluation of the main power system, onsite electrical power distribution

systems, emergency diesel generators, station blackout, and environmental qualification: