July 24, 1996

Mr. W. R. Robinson, 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: ISSUANCE OF AMENDMENT NO. 65 TO FACILITY OPERATING LICENSE NO. NPF-63 REGARDING RELOCATION OF INCORE INSTRUMENT REQUIREMENTS - SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1 (TAC NO. M95064)

Dear Mr. Robinson:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 65 to Facility Operating License No. NPF-63 for the Shearon Harris Nuclear Power Plant, Unit 1. This amendment changes the Technical Specifications in response to your request dated March 20, 1996.

The amendment allows the relocation of requirements under TS 3.3.3.2, Movable Incore Detectors and associated bases to the plant Core Operating Limits Report (COLR).

A copy of the related Safety Evaluation is enclosed. Notice of Issuance will be included in the Commission's regular bi-weekly Federal Register notice.

Sincerely,
Original signed by:
Ngoc B. Le, Project Manager
Project Directorate II-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-400

Enclosures:
1. Amendment No. 65 to NPF-63
2. Safety Evaluation

cc w/enclosures:
See next page
DOCUMENT NAME: G:\HARRIS\HAR95064.AMD

OFFICE	LA:PDII-1	PM:PDII-1	SRXB	OGC	D:PDII-1
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COPY	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No

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Draft

LP-1

cc:

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AMENDMENT NO. 65 TO FACILITY OPERATING LICENSE NO. NPF-63 - HARRIS, UNIT 1

Docket File
PUBLIC
PDII-1 Reading
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cc: Harris Service List

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

CAROLINA POWER & LIGHT COMPANY, et al.

DOCKET NO. 50-400

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 65
License No. NPF-63

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Carolina Power & Light Company, (the licensee), dated March 20, 1996, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications, as indicated in the attachment to this license amendment; and paragraph 2.C.(2) of Facility Operating License No. NPF-63 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, as revised through Amendment No. 65 , are hereby incorporated into this license. Carolina Power & Light Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Eugene V. Imbro, Director
Project Directorate II-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 24, 1996

ATTACHMENT TO LICENSE AMENDMENT NO. 65

FACILITY OPERATING LICENSE NO. NPF-63

DOCKET NO. 50-400

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised areas are indicated by marginal lines.

Remove Pages	Insert Pages
vi	vi
3/4 3-56	3/4 3-56
B 3/4 3-4	B 3/4 3-4

SECTION		PAGE
TABLE 3.3-6	RADIATION MONITORING INSTRUMENTATION FOR PLANT OPERATIONS	3/4 3-51
TABLE 4.3-3	RADIATION MONITORING INSTRUMENTATION FOR PLANT OPERATIONS SURVEILLANCE REQUIREMENTS	3/4 3-54
	(Deleted)	3/4 3-56 |
	Seismic Instrumentation	3/4 3-57
TABLE 3.3-7	SEISMIC MONITORING INSTRUMENTATION	3/4 3-58
TABLE 4.3-4	SEISMIC MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS	3/4 3-59
	Meteorological Instrumentation	3/4 3-60
TABLE 3.3-8	METEOROLOGICAL MONITORING INSTRUMENTATION	3/4 3-61
TABLE 4.3-5	METEOROLOGICAL MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS	3/4 3-62
	Remote Shutdown System	3/4 3-63
TABLE 3.3-9	REMOTE SHUTDOWN SYSTEM	3/4 3-64
TABLE 4.3-6	REMOTE SHUTDOWN MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS	3/4 3-65
	Accident Monitoring Instrumentation	3/4 3-66
TABLE 3.3-10	ACCIDENT MONITORING INSTRUMENTATION	3/4 3-68
TABLE 4.3-7	ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS	3/4 3-70
TABLE 3.3-11	(DELETED)	3/4 3-73
	Metal Impact Monitoring System	3/4 3-74
	(DELETED)	3/4 3-75
	Explosive Gas Monitoring Instrumentation	3/4 3-82
TABLE 3.3-13	EXPLOSIVE GAS MONITORING INSTRUMENTATION	3/4 3-83
TABLE 4.3-9	EXPLOSIVE GAS MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS	3/4 3-86
3/4.3.4	DELETED	3/4 3-89

INSTRUMENTATION

MOVABLE INCORE DETECTORS - DELETED

3/4.3.3.2 MOVABLE INCORE DETECTORS - DELETED

3/4.3.3.3 SEISMIC INSTRUMENTATION

The OPERABILITY of the seismic instrumentation ensures that sufficient capability is available to promptly determine the magnitude of a seismic event and evaluate the response of those features important to safety. This capability is required to permit comparison of the measured response to that used in the design basis for the facility to determine if plant shutdown is required pursuant to Appendix A of 10 CFR Part 100. The instrumentation is consistent with the recommendations of Regulatory Guide 1.12, "Instrumentation for Earthquakes," April 1974.

3/4.3.3.4 METEOROLOGICAL INSTRUMENTATION

The OPERABILITY of the meteorological instrumentation ensures that sufficient meteorological data are available for estimating potential radiation doses to the public as a result of routine or accidental release of radioactive materials to the atmosphere. This capability is required to evaluate the need for initiating protective measures to protect the health and safety of the public and is consistent with the recommendations of Regulatory Guide 1.23, "Onsite Meteorological Programs," February 1972.

3/4.3.3.5 REMOTE SHUTDOWN SYSTEM

The OPERABILITY of the Remote Shutdown System ensures that sufficient capability is available to permit safe shutdown of the facility from locations outside of the control room. This capability is required in the event control room habitability is lost and is consistent with General Design Criterion 19 of 10 CFR Part 50.

The OPERABILITY of the Remote Shutdown System ensures that a fire will not preclude achieving safe shutdown. The Remote Shutdown System instrumentation, control, and power circuits and transfer switches necessary to eliminate effects of the fire and allow operation of instrumentation, control and power circuits required to achieve and maintain a safe shutdown condition are independent of areas where a fire could damage systems normally used to shut down the reactor.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 65 TO FACILITY OPERATING LICENSE NO. NPF-63

CAROLINA POWER & LIGHT COMPANY

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1

DOCKET NO. 50-400

1.0 INTRODUCTION

By letter dated March 20, 1996, Carolina Power & Light Company (the licensee or CP&L) submitted a request for changes to the Shearon Harris Nuclear Power Plant, Unit 1 (SHNPP) Technical Specifications (TS). The proposed amendment would revise the TS to allow the relocation of the requirement of TS 3.3.3.2, Movable Incore Detectors (MID) and the associated Bases in the TS, to licensee-controlled documents.

2.0 BACKGROUND

Section 182a of the Atomic Energy Act (the "Act") requires that applicants for nuclear power plant operating licenses state TS and that these TS be included as a part of the license. The Commission's regulatory requirements related to the content of TS are set forth in 10 CFR 50.36. That regulation requires that the TS include items in five specific categories including: (1) safety limits, limiting safety system settings and limiting control settings; (2) limiting conditions for operation; (3) surveillance requirements; (4) design features; and (5) administrative controls. It also states that the Commission may include such additional TS as it finds to be appropriate. However, the regulation does not specify the particular TS to be included in a plant's license.

The Commission has provided guidance for the contents of TS in its "Final Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors" (Final Policy Statement), issued on July 22, 1993 (58 FR 39132), in which the Commission indicated that compliance with the Final Policy Statement satisfies Section 182a of the Act. In particular, the Commission indicated that certain items could be relocated from the TS to licensee-controlled documents.

Consistent with this approach, the Final Policy Statement identified four criteria to be used in determining whether a particular matter is required to be included in the TS, as follows:

> Criterion 1: installed instrumentation that is used to detect and indicate in the control room a significant abnormal degradation of the

reactor coolant pressure boundary;

Criterion 2: a process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of, or presents a challenge to, the integrity of a fission product barrier;

Criterion 3: a structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier;

Criterion 4: a structure, system, or component which operating experience or probabilistic safety assessment has shown to be significant to public health and safety.[1]

As a result, the existing Limiting Condition for Operation (LCO) requirements that fall within or satisfy any of the criteria in the Final Policy Statement must be retained in the TS, while those LCO requirements which do not fall within or satisfy these criteria may be relocated to other appropriate licensee-controlled documents.

3.0 EVALUATION

3.1 DESCRIPTION OF THE PROPOSED CHANGES

By letter dated March 20, 1996, Carolina Power & Light Company requested changes to the Technical Specifications for the Shearon Harris Nuclear Power Plant Unit 1 (SHNPP). These proposed changes would eliminate Technical Specification 3.3.3.2 and relocate the TS requirement for the Movable Incore Detectors (MID), its associated surveillance requirements and TS Bases to plant procedure PLP-106, "Technical Specification Equipment List Program and Core Operating Limits Report."

3.2 GENERAL CONSIDERATIONS

The licensee provided an analysis of the proposed changes with regard to the above four criteria, as follows:

Criterion 1: The MID instrumentation is not used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary.

Criterion 2: The MID instrumentation is not a process variable, that is

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[1] The Commission recently adopted an amendment to 10 CFR 50.36, pursuant to which the rule was revised to codify and incorporate these criteria. See Final Rule, "Technical Specifications," (60 FR 36953, July 19, 1995). The Commission indicated that the reactor core isolation cooling, isolation condenser, residual heat removal, standby liquid control, and recirculation pump are included in the TS under Criterion 4, although it recognized that other structures, systems and components could also meet this criterion (60 FR 36956).

an initial condition of a Design Basis Accident (DBA) or Transient that either assumes the failure of or present a challenge to the integrity of a fission product barrier.

Criterion 3: The MID instrumentation is not a system that is part of the primary success path and which functions or actuates to mitigate a DBA or Transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

Criterion 4: The MID instrumentation was not identified as a significant risk contributor, based on the PRA report for the Merits Program contained in WCAP-11618 for the Harris plant.

The licensee stated in its submittal that the MID system at SHNPP is used periodically to calculate power peaking factors to verify nuclear design predictions, ensure operation within established fuel performance limits, and calibrate other nuclear instrumentation. The measurements are used in a confirmatory manner and do not provide direct input to reactor protection system or engineered safety features actuation system functions. The system is neither used for, nor capable of, detecting a significant abnormal degradation of the reactor coolant pressure boundary before a design basis accident, nor does it function as a primary success path to mitigate events which assume a failure or a challenge to the integrity of fission product barriers. Thus the detectors are not an active design feature needed to preclude analyzed accidents or transients.

The staff has reviewed the licensee's analysis and agrees that the items proposed to be relocated from the TS to licensee-controlled documents do not meet the above listed four criteria and, therefore, the proposed relocations are acceptable, subject to the following additional considerations.

3.3 ADDITIONAL CONSIDERATIONS

Essentially all pressurized water reactors' Technical Specifications contain a requirement for operability of 75% of the incore detector locations for mapping of the core power distribution. In-core detector data are used to calculate power peaking factors which are used to verify compliance with fuel performance limits. While relocating the MID system operability requirements is not a concern, the possibility of changing the number and/or distribution requirements has required additional considerations.

On a number of occasions, for various reasons, failures of detector strings in operating PWRs have approached or exceeded 25%, and relaxation of the 75% requirement has been permitted for the duration of the affected operating cycle. This relaxation was justifiable because the reactor had started the cycle and performed the physics startup tests with at least 75% of the incore detector locations operable, general trends for the cycle had been established and the system would be restored to full (or nearly full) complement before beginning the next cycle. In addition, the uncertainties in the measurements were increased to account for fewer operable detectors.

A major safety concern relating to degration of incore mapping ability is the ability to detect anomalous conditions in the core. One of these is the inadvertent loading of a fuel assembly into an improper position. Since this is a loading problem, it is of concern if long-term operation with fewer than 75% of the detectors is considered; this is not of as much concern when relaxation of requirements is considered for only the remainder of an operating cycle.

The current Technical Specification 3.3.3.2 was established to ensure adequate core coverage. Changes to this requirement must be carefully reviewed and justification provided to specify how adequate core coverage would be maintained and how anomalies would be detected.

The licensee has stated that appropriate controls will be maintained to ensure that the MID is operable with specified minimum number of detector thimbles available, and that changes to the current requirements regarding the operability of incore detectors will be evaluated under 10 CFR 50.59 or by license amendment. In order to change the requirements concerning the number and location of operable detectors, the staff deems that a rigorous evaluation and justification is required. The following is a list of elements that must be part of a 50.59 determination and available for audit if the licensee wishes to change the requirements:

1) how an inadvertent loading of a fuel assembly into an improper location will be detected,

2) how the validity of the tilt estimates will be ensured,

3) how adequate core coverage will be maintained,

4) how the measurement uncertainties will be assured and why the added uncertainties are adequate to guarantee that measured nuclear heat flux hot channel factor, nuclear enthalpy rise hot channel factor, radial peaking factor and quadrant power tilt factor meet Technical Specification limits, and

5) how the MID system will be restored to full (or nearly full) service before the beginning of each cycle.

4.0 TECHNICAL SPECIFICATION CHANGES

Specification 3.3.3.2 - Relocate current TS requirement to plant procedure PLP-106, "Technical Specification Equipment List Program and Core Operating Limits Report." This is acceptable as discussed in Section 3 above.

Table of Contents entry and BASES section for Specification 3.3.3.2 - Remove these from the Technical Specifications.

5.0 STATE CONSULTATION

In accordance with the Commission's regulations, the appropriate North Carolina State official was notified of the proposed issuance of the amendment. The State official had no comments.

6.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (61 FR 18164). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

7.0 CONCLUSION

Based on the staff evaluation in Section 3.0 above, the staff concludes that eliminating Technical Specification 3.3.3.2 and relocating the limitations on the use of the MID System to licensee-control procedures is acceptable. However, changes to the number and distribution of incore detector measurements necessary to measure the core power distribution limits must meet the criteria set forth in Section 3 above and are to be controlled by 10 CFR 50.59. The staff has concluded, therefore, that relocation of TS 3.3.3.2 and the deletion of the Bases associated with TS 3.3.3.2 is acceptable because (1) their inclusion in TS is not specifically required by 10 CFR 50.36 or other regulations, (2) the requirements are not required to avert an immediate threat to the public health and safety, and (3) changes that are deemed to involve an unreviewed safety question will require prior NRC approval in accordance with 10 CFR 50.59(c).

The Commission has concluded, based on the considerations discussed above, that (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors: M. Chatterton
N. Le

Date: July 24, 1996