



**CP&L**

**Carolina Power & Light Company**

P.O. Box 1551 • Raleigh, N.C. 27602

R. B. STARKEY, JR.  
Vice President  
Nuclear Services Department

SEP 8 1992

SERIAL: NLS-92-247  
10 CFR 50.90

United States Nuclear Regulatory Commission  
ATTENTION: Document Control Desk  
Washington, DC 20555

SHEARON HARRIS NUCLEAR POWER PLANT  
DOCKET NO. 50-400/LICENSE NO. NPF-63  
REQUEST FOR LICENSE AMENDMENT  
EMERGENCY CORE COOLING SYSTEM SURVEILLANCE FLOW REQUIREMENTS

Gentlemen:

In accordance with the Code of Federal Regulations, Title 10, Parts 50.90 and 2.101, Carolina Power & Light Company (CP&L) hereby requests a revision to the Technical Specifications (TS) for the Shearon Harris Nuclear Power Plant (SHNPP).

The proposed change decreases the sum of the minimum Safety Injection intact line flow rates, with a single Charging/Safety Injection pump running, as described in Technical Specification Surveillance Requirement 4.5.2.h.1.a from "greater than or equal to 379 gpm" to "greater than or equal to 348 gpm."

Enclosure 1 provides a detailed description of the proposed change and the basis for the change.

Enclosure 2 details, in accordance with 10 CFR 50.91(a), the basis for the Company's determination that the proposed change does not involve a significant hazards consideration.

Enclosure 3 provides an environmental evaluation which demonstrates that the proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental assessment needs to be prepared in connection with the issuance of the amendment.

Enclosure 4 provides page change instructions for incorporating the proposed revision.

Enclosure 5 provides the proposed Technical Specification page.

In accordance with 10 CFR 50.91(b), CP&L is providing the State of North Carolina with a copy of the proposed license amendment.

In order to allow time for procedure revision and orderly incorporation into copies of the Technical Specifications, CP&L requests that the proposed

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amendment, once approved by the NRC, be issued such that implementation will occur within 60 days of issuance of the amendment.

Please refer any questions regarding this submittal to Mr. R. W. Prunty at (919) 546-7318.

Yours very truly,



R. B. Starkey

SDC/sdc

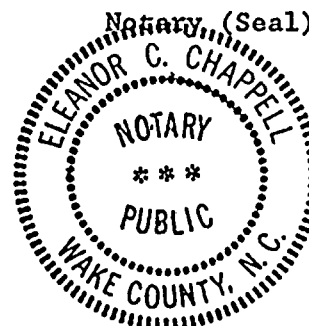
Enclosures:

1. Basis for Change Request
2. 10 CFR 50.92 Evaluation
3. Environmental Considerations
4. Page Change Instructions
5. Technical Specification Pages

R. B. Starkey, having been first duly sworn, did depose and say that the information contained herein is true and correct to the best of his information, knowledge and belief; and the sources of his information are officers, employees, contractors, and agents of Carolina Power & Light Company.

*Eleanor C. Chappell*

My commission expires: *2/6/96*



cc: Mr. Dayne H. Brown  
Mr. S. D. Ebnetter  
Mr. N. B. Le  
Mr. J. E. Tedrow

ENCLOSURE 1

SHEARON HARRIS NUCLEAR POWER PLANT  
NRC DOCKET NO. 50-400/LICENSE NO. NPF-63  
REQUEST FOR LICENSE AMENDMENT  
ECCS SURVEILLANCE FLOW REQUIREMENTS

BASIS FOR CHANGE REQUEST

Background

The Shearon Harris Nuclear Power Plant (SHNPP) Technical Specifications, Section 3/4.5, mandate Operability and Surveillance requirements for the Emergency Core Cooling System (ECCS). Part of that Section, Specification 3/4.5.2 "ECCS Subsystems -  $T_{avg}$  Greater Than or Equal To 350°F," establishes requirements for two independent subsystems. Each subsystem includes a Charging/Safety Injection Pump (CSIP), a Residual Heat Removal (RHR) Pump, an RHR Heat Exchanger as well as the cooling water supply and injection flow paths, while in operating modes 1, 2 or 3.

The Operability requirements for two independent subsystems ensures that sufficient emergency core cooling capability will be available in the event of a LOCA assuming the loss of one subsystem through any single failure consideration. Either subsystem operating in conjunction with the accumulators is capable of supplying sufficient core cooling to limit the peak cladding temperatures (PCT) within acceptable limits for all postulated break sizes ranging from the double-ended break on the largest RCS cold leg pipe downward. The effectiveness of the ECCS is calculated using an acceptable evaluation model in accordance with the requirements of 10 CFR 50.46. ECCS performance is measured against various limits and parameters described in Part 50.46(b) including PCT, maximum cladding oxidation, maximum hydrogen creation, maintenance of a coolable geometry and long-term cooling performance.

The Surveillance Requirements provided to ensure operability of each component also ensure that at a minimum, the assumptions used in the Final Safety Analysis Report (FSAR) are met and that subsystem operability is maintained. Surveillance 4.5.2.h.1.a ensures the operability and proper balancing of the injection line flowpaths by maintaining a minimum flow of 379 gpm to be delivered by a single CSIP to the reactor core through the two highest resistance flowpaths. Maintenance of proper flow resistance and pressure drop in the piping system to each injection point is necessary to provide the proper flow split between injection points in accordance with the assumptions used in the ECCS-LOCA analyses. Maintenance of the flow resistance and pressure drop also provides an acceptable level of total ECCS flow to all injection points equal to or above that assumed in the ECCS-LOCA analyses.

Proposed Change

The proposed change decreases the sum of the minimum Safety Injection intact line flow rates, with a single Charging/Safety Injection pump running, as described in Technical Specification Surveillance Requirement 4.5.2.h.1.a from "greater than or equal to 379 gpm" to "greater than or equal to 348 gpm."

Basis

The current Surveillance Limit of 379 gpm is the originally established value for ECCS flow. It is conservative in that it exceeds the cooling flow to the reactor core assumed in the existing ECCS system performance evaluation performed by Westinghouse for CP&L in accordance with 10 CFR 50.46 and upon which the FSAR analyses (Chapters 6 and 15) are based.

The proposed change decreases the minimum Safety Injection flow limit to the reactor coolant system which is available via two intact coolant loops during a Loss-of-Coolant-Accident from 379 gpm to 348 gpm such that it is consistent with the existing ECCS evaluations.

The normal effect of an SI flow decrease would be the reduction in coolant inventory available for core cooling, with an expected increase in the Peak Cladding Temperature, for the limiting case analyzed. However, the Technical Specification surveillance value of 379 gpm is conservative compared to the value used by Westinghouse in the limiting LOCA-ECCS analysis. Therefore, with the proposed change to 348 gpm, the safety injection flow becomes consistent with the minimum injection flow assumptions of the limiting ECCS-LOCA analysis. Thus, the change is accommodated by the current ECCS-LOCA analysis without altering its analyzed consequences, i.e., there are no changes in the limiting case LOCA consequences for minimum SI flow and the existing margins to the 10 CFR 50.46 acceptance limits for core cooling are preserved. Similarly, there is no impact on the consequences predicted by other accident analyses (both LOCA and non-LOCA) as presented in the FSAR. Even though the high-head safety injection flowrate is used in evaluating the consequences of other events, the LOCA analysis is the limiting event in establishing the required high-head safety injection flowrate as documented in the Technical Specification Bases.

Conclusions

The proposed change to Technical Specification 4.5.2.h.1.a can be accomplished without altering the results of the ECCS-LOCA analyses previously provided for SHNPP. Thus, there will be no adverse impact resulting from the proposed change.

ENCLOSURE 2

SHEARON HARRIS NUCLEAR POWER PLANT  
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ECCS SURVEILLANCE FLOW REQUIREMENTS

10 CFR 50.92 EVALUATION

The Commission has provided standards in 10 CFR 50.92(c) for determining whether a significant hazards consideration exists. A proposed amendment to an operating license for a facility involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated, (2) create the possibility of a new or different kind of accident from any accident previously evaluated, or (3) involve a significant reduction in a margin of safety. Carolina Power & Light Company has reviewed this proposed license amendment request and determined that its adoption would not involve a significant hazards consideration. The bases for this determination are as follows:

Proposed Change

The proposed change decreases the sum of the minimum Safety Injection intact line flow rates, with a single Charging/Safety Injection pump running, as described in Technical Specification Surveillance Requirement 4.5.2.h.1.a from "greater than or equal to 379 gpm" to "greater than or equal to 348 gpm."

Basis

This change does not involve a significant hazards consideration for the following reasons:

1. The proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed change affects Safety Injection flow which is a mitigative condition following the occurrence of an accident and has no impact on the probability of an accident occurring.

The change in the Surveillance flowrate is accommodated by the current ECCS-LOCA analysis without altering its analyzed consequences, i.e., there are no changes in the limiting case LOCA consequences for minimum safety injection flow and the existing margins to the 10 CFR 50.46 acceptance limits for core cooling are preserved. Similarly, there is no impact on the consequences predicted by the accident analyses as presented in the FSAR.

Therefore, there would be no increase in the probability or consequences of an accident previously evaluated.





2. The proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

The limiting consequences associated with minimum conditions of Safety Injection flow are already addressed within the ECCS-LOCA analysis provided in FSAR Sections 6.2 and 6.3, and the supporting documentation. The proposed change in the acceptable minimum Safety Injection flow condition for one Safety Injection pump is consistent with the analyzed accident assumptions. The proposed change makes no other changes to the facility or its operation. Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. The proposed amendment does not involve a significant reduction in the margin of safety.

The proposed change decreases the sum of the minimum Safety Injection intact line flow rates as described in Technical Specification 4.5.2.h.1.a "to greater than or equal to 348 gpm." This limit is established in conjunction with the minimum flow requirement of the ECCS-LOCA analysis. The acceptance limits for the ECCS-LOCA analysis are described in NUREG-1038 (Supplement 4) as being the 10 CFR 50.46 prescribed criteria for core cooling. The proposed change is consistent with the assumptions under which the ECCS-LOCA analysis was performed. Therefore, the proposed changes do not involve a significant reduction in a margin of safety.

ENCLOSURE 3

SHEARON HARRIS NUCLEAR POWER PLANT  
NRC DOCKET NO. 50-400/LICENSE NO. NPF-63  
REQUEST FOR LICENSE AMENDMENT  
ECCS SURVEILLANCE FLOW REQUIREMENTS

ENVIRONMENTAL CONSIDERATIONS

10 CFR 51.22(c)(9) provides criterion for and identification of licensing and regulatory actions eligible for categorical exclusion from performing an environmental assessment. A proposed amendment to an operating license for a facility requires no environmental assessment if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant hazards consideration; (2) result in a significant change in the types or significant increase in the amounts of any effluents that may be released offsite; (3) result in an increase in individual or cumulative occupational radiation exposure. Carolina Power & Light Company has reviewed this request and determined that the proposed 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 needs to be prepared in connection with the issuance of the amendment. The basis for this determination follows:

Proposed Change

The proposed change decreases the sum of the minimum Safety Injection intact line flow rates, with a single Charging/Safety Injection pump running, as described in Technical Specification Surveillance Requirement 4.5.2.h.1.a from "greater than or equal to 379 gpm" to "greater than or equal to 348 gpm."

Basis

The change meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) for the following reasons:

1. As demonstrated in Enclosure 2, the proposed amendment does not involve a significant hazards consideration.
2. The proposed amendment does not result in a significant change in the types or significant increase in the amounts of any effluents that may be released offsite.

The proposed decrease in the minimum allowable Safety Injection flow to two coolant loops from a single Safety Injection pump is consistent with the minimum flow assumptions of the existing ECCS-LOCA analysis. Thus, the change can be accommodated without altering the current accident analysis and consequences. As such, the change can not affect the types or amounts of any effluents that may be released offsite.

3. The proposed amendment does not result in an increase in individual or cumulative occupational radiation exposure.

Since the consequences of the proposed change are bounded by the existing ECCS-LOCA analysis, no changes to the radiation environment or effluent releases will occur within the plant. Therefore, the amendment has no effect on either individual or cumulative occupational radiation exposure.

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ENCLOSURE 4  
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ECCS SURVEILLANCE FLOW REQUIREMENTS

PAGE CHANGE INSTRUCTIONS

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