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 AUTH.NAME: SCAROLA, J. AUTHOR AFFILIATION: Carolina Power & Light Co.
 RECIPIENT AFFILIATION: Records Management Branch (Document Control Desk)

SUBJECT: Application for amend to license NPF-63, revising TS Table Notations for TS Table 3.3-4, "ESFAS Instrumentation Trip Setpoints." Description of changes & environmental evaluation, encl.

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PO Box 165
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James Scarola
Vice President
Harris Nuclear Plant

FEB 26 1999

SERIAL: HNP-99-018
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
TIME CONSTANT CORRECTIONS IN TECHNICAL SPECIFICATION TABLE 3.3-4

Dear Sir or Madam:

In accordance with the Code of Federal Regulations, Title 10, Part 50.90, Carolina Power & Light Company (CP&L) requests a revision to the Technical Specifications (TS) for the Harris Nuclear Plant (HNP). The proposed amendment revises the Table Notations for TS Table 3.3-4, "Engineered Safety Features Actuation System Instrumentation Trip Setpoints." Specifically, the time constants utilized in the lead-lag controller for Steam Line Pressure - Low (Table item 1.e.) are $\tau_1 \geq 50$ seconds and $\tau_2 \geq 5$ seconds. The proposed amendment revises τ_2 to ≤ 5 seconds. Also, the time constant utilized in the rate-lag controller for Negative Steam Line Pressure Rate - High (Table item 4.e.) is less than or equal to 50 seconds. The proposed amendment revises this time constant to ≥ 50 seconds.

It has been determined that these time constants, which have existed in the HNP TS since initial plant licensing, are non-conservative. This is contradictory to the existing setpoint program philosophy. Utilizing the non-conservative time constants has not, however, resulted in HNP exceeding the Allowable Values for the parameters provided in Table 3.3-4. Correcting the two time constants will ensure conservative calibration of the Engineered Safety Feature Actuation System instrumentation.

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

Enclosure 2 details, in accordance with 10 CFR 50.91(a), the basis for CP&L's determination that the proposed changes do 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 is required for approval of this amendment request.

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

Enclosure 5 provides the proposed TS pages.

CP&L requests that the proposed amendment be issued such that implementation will occur within 60 days of issuance to allow time for orderly incorporation into copies of the TS.

Please refer any questions regarding this submittal to Mr. J. H. Eads at (919) 362-2646.

Sincerely,

James Scarola

AEC/aec

Enclosures:

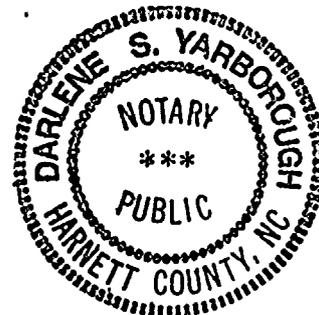
1. Basis for Change Request
2. 10 CFR 50.92 Evaluation
3. Environmental Considerations
4. Page Change Instructions
5. Technical Specification Pages

James Scarola, 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 employees, contractors, and agents of Carolina Power & Light Company.

Darlene S. Yarbrough
Notary (Seal)

My commission expires: 2-6-2000

- c: Mr. J. B. Brady (NRC Senior Resident Inspector)
Mr. S. C. Flanders (NRR Project Manager, HNP)
Mr. Mel Fry (Acting Director, N.C. DEHNR)
Mr. L. A. Reyes (NRC Regional Administrator, Region II)



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BASIS FOR CHANGE REQUEST

Background

Harris Nuclear Plant (HNP) Technical Specification (TS) Table 3.3-4, "Engineered Safety Features Actuation System Instrumentation Trip Setpoints" provides the trip setpoints and allowable values for various instrumentation used to actuate Engineered Safety Features (ESFs). The ESF Actuation System (ESFAS) senses selected plant parameters and determines whether or not predetermined limits are being exceeded. If they are, the signals are combined into logic matrices sensitive to combinations indicative of various accident events and transients. Once the required logic combination is completed, the system sends actuation signals to those ESF components whose aggregate function best serves the requirements of the condition.

The Trip Setpoints in Table 3.3-4 are the nominal values at which the bistables are set for each functional unit. To accommodate the instrument drift assumed to occur between operational tests and the accuracy to which setpoints can be measured and calibrated, Allowable Values for the setpoints have been specified in Table 3.3-4. Operation with setpoints less conservative than the Trip Setpoint but within the Allowable Value is acceptable since an allowance has been made in the safety analysis to accommodate this error.

The first ESF function listed in this table is "Safety Injection" (Table Item 1.), with five plant parameters which generate a Safety Injection. One of these parameters is "Steam Line Pressure - Low" (Table Item 1.e.). The instrumentation used to detect the low steam line pressure has a Trip Setpoint of ≥ 601 psig and an Allowable Value of ≥ 578.3 psig. A notation is provided for this Allowable Value stating "Time constants utilized in the lead-lag controller for Steam Line Pressure - Low are $\tau_1 \geq 50$ seconds and $\tau_2 \geq 5$ seconds. CHANNEL CALIBRATION shall ensure that these time constants are adjusted to these values."

The fourth ESF function listed in Table 3.3-4 is "Main Steam Line Isolation" (Table Item 4.), with five plant parameters which generate a Main Steam Isolation. One of these parameters is "Negative Steam Line Pressure Rate - High" (Table Item 4.e.) The instrumentation used to detect high negative steam line pressure rate has a Trip Setpoint of ≤ 100 psi and an Allowable Value of ≤ 122.8 psi. A notation is provided for this Allowable Value stating "The time constant utilized in the rate-lag controller for Steam Line Pressure-Negative Rate - High is less than or equal to 50 seconds. CHANNEL CALIBRATION shall ensure that this time constant is adjusted to this value."

Proposed Change

The proposed amendment revises the Table Notations for the Harris Nuclear Plant Technical Specification Table 3.3-4, "Engineered Safety Features Actuation System Instrumentation Trip

Setpoints." The table notation for "Steam Line Pressure - Low" (Table Item 1.e.) will be revised to read "Time constants utilized in the lead-lag controller for Steam Line Pressure - Low are $\tau_1 \geq 50$ seconds and $\tau_2 \leq 5$ seconds. CHANNEL CALIBRATION shall ensure that these time constants are adjusted to these values."

The table notation for "Negative Steam Line Pressure Rate - High" (Table Item 4.e.) will be revised to read "The time constant utilized in the rate-lag controller for Steam Line Pressure-Negative Rate - High is ≥ 50 seconds. CHANNEL CALIBRATION shall ensure that this time constant is adjusted to this value."

Basis

The Westinghouse Setpoint Methodology for Protection Systems - Shearon Harris, Revision 2, and Westinghouse Improved Technical Specifications, Revision 1 (04/07/95) both specify the τ_2 time constant for the lead-lag controller for Steam Line Pressure - Low as ≤ 5 seconds. The Standard Technical Specifications for Westinghouse Pressurized Water Reactors, NUREG 0452, Revision 5 (Draft), upon which the HNP TS were based, incorrectly specified the τ_2 time constant for the lead-lag controller for Steam Line Pressure - Low as ≥ 5 seconds. A time constant of less than or equal to 5 seconds provides a more conservative setpoint because it would cause the anticipatory Low Steam Line Pressure Safety Injection circuitry to function sooner if a true Low Steam Line Pressure signal is sensed. The HNP calibration procedures currently specify a τ_1 time constant of 50 to 55 seconds and a τ_2 time constant of 5.0 to 5.5 seconds. The Allowable Values for the instrumentation have not been exceeded using these time constants. In addition, the accident analyses presented in Chapter 15 of the HNP Final Safety Analyses have been evaluated to not be impacted by the incorrect inequality sign on the τ_2 time constant. Plant operation, as indicated in calibration data sheets, has been and continues to be bounded by the Chapter 15 analyses of record. Changing the τ_2 time constant to be less than or equal to 5 seconds will provide for a more conservative calibration of the ESFAS instrumentation.

Both the Standard Technical Specifications for Westinghouse Pressurized Water Reactors, NUREG 0452, Revision 5 (Draft) and the Westinghouse Improved Technical Specifications, Revision 1 (04/07/95) incorrectly specified the time constant utilized in the rate-lag controller for Steam Line Pressure-Negative Rate - High as less than or equal to 50 seconds. A revision to the Westinghouse Improved Technical Specifications, currently being processed, corrects this time constant to be greater than or equal to 50 seconds. A time constant of greater than or equal to 50 seconds would allow for a more conservative Trip Setpoint. The HNP calibration procedures currently specify a time constant between 45 and 50 seconds for this rate controller. The minimum rate time constant of 45 seconds results in a step input of 111.83 psi which is substantially below the existing TS Allowable Value of 122.8 psi. Therefore, the non-conservative time constant will not cause HNP to exceed analyzed safety limits. Changing the time constant to be greater than or equal to 50 seconds will, however, result in a more conservative Trip Setpoint and will conform with the existing setpoint program philosophy and other HNP TS related setpoints.

Conclusions

The τ_2 time constant for the lead-lag controller for Steam Line Pressure - Low, and the time constant utilized in the rate-lag controller for Steam Line Pressure-Negative Rate - High were discovered to be non-conservative. These time constants have existed in the HNP TS since initial plant licensing. Although these time constants are used in the calibration of the ESFAS instrumentation, the Allowable Values for the affected instrumentation have not been exceeded. In addition, safety limits and safety analyses have not been adversely impacted by the non-conservative time constants. Correcting the time constants will result in more conservative calibration of the ESFAS instrumentation.

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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 determination. The bases for this determination are as follows:

Proposed Change

The proposed amendment revises the Table Notations for the Harris Nuclear Plant Technical Specification Table 3.3-4, "Engineered Safety Features Actuation System Instrumentation Trip Setpoints." The table notation for "Steam Line Pressure - Low" (Table Item 1.e.) will be revised to read "Time constants utilized in the lead-lag controller for Steam Line Pressure - Low are $\tau_1 \geq 50$ seconds and $\tau_2 \leq 5$ seconds. CHANNEL CALIBRATION shall ensure that these time constants are adjusted to these values."

The table notation for "Negative Steam Line Pressure Rate - High" (Table Item 4.e.) will be revised to read "The time constant utilized in the rate-lag controller for Steam Line Pressure-Negative Rate - High is ≥ 50 seconds. CHANNEL CALIBRATION shall ensure that this time constant is adjusted to this value."

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.

Correcting the time constants will ensure conservative calibration of the Engineered Safety Feature Actuation System instrumentation. The proposed amendment will not introduce any new equipment or require existing equipment to function different from that previously evaluated in the Final Safety Analysis Report (FSAR) or TS. Therefore, the proposed change does not involve a significant 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.

Correcting the time constants will ensure conservative calibration of the Engineered Safety Feature Actuation System instrumentation. The proposed amendment will not introduce any new equipment or require existing equipment to function different from that previously evaluated in the Final Safety Analysis Report (FSAR) or TS. The proposed amendment will not create any new accident scenarios, because the change does not introduce any new single failures, adverse equipment or material interactions, or release paths. Therefore, the proposed change does 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.

Correcting the time constants will ensure conservative calibration of the Engineered Safety Feature Actuation System instrumentation. Therefore, the proposed change does not involve a significant reduction in the margin of safety.

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ENVIRONMENTAL CONSIDERATIONS

10 CFR 51.22(c)(9) provides criteria for 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 a significant 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 is as follows:

Proposed Change

The proposed amendment revises the Table Notations for the Harris Nuclear Plant Technical Specification Table 3.3-4, "Engineered Safety Features Actuation System Instrumentation Trip Setpoints." The table notation for "Steam Line Pressure - Low" (Table Item 1.e.) will be revised to read "Time constants utilized in the lead-lag controller for Steam Line Pressure - Low are $\tau_1 \geq 50$ seconds and $\tau_2 \leq 5$ seconds. CHANNEL CALIBRATION shall ensure that these time constants are adjusted to these values."

The table notation for "Negative Steam Line Pressure Rate - High" (Table Item 4.e.) will be revised to read "The time constant utilized in the rate-lag controller for Steam Line Pressure-Negative Rate - High is ≥ 50 seconds. CHANNEL CALIBRATION shall ensure that this time constant is adjusted to this value."

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 increase in the amounts of any effluents that may be released offsite.

The proposed change does not involve any new equipment or require existing systems to perform a different type of function than they are currently designed to perform. The

change does not introduce any new effluents or increase the quantities of existing effluents. As such, the change cannot affect the types or amounts of any effluents that may be released offsite.

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

The proposed change does not result in any physical plant changes or new surveillance which would require additional personnel entry into radiation controlled areas. Therefore, the amendment will not result in an increase in individual or cumulative occupational radiation exposure.

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PAGE CHANGE INSTRUCTIONS

<u>Removed Page</u>	<u>Inserted Page</u>
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TECHNICAL SPECIFICATION PAGES