February 24, 2000

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: SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1 - ISSUANCE OF AMENDMENT RE: HEAT FLUX HOT CHANNEL FACTOR FQ(Z), RCS FLOW RATE AND ENTHALPY RISE HOT CHANNEL FACTOR, AND DNB PARAMETERS (TAC NO. MA6097)

Dear Mr. Scarola:

The Nuclear Regulatory Commission has issued Amendment No. 95 to Facility Operating License No. NPF-63 for the Shearon Harris Nuclear Power Plant (HNP), Unit No. 1, in response to your request dated July 9, 1999, as supplemented on January 19, 2000. This amendment revises Harris Nuclear Plant (HNP) Technical Specifications (TS) 3/4.2.2, "Heat Flux Hot Channel Factor - $F_Q(Z)$," TS 3/4.2.3, "RCS Flow Rate And Nuclear Enthalpy Rise Hot Channel Factor," TS 3/4.2.5, "DNB Parameters," an associated note in TS Table 2.2-1, and associated Bases.

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,
/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

Enclosures:
1. Amendment No. 95 to NPF-63
2. Safety Evaluation

cc w/enclosures:
See next page

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COPY	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No

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AMENDMENT NO. 95 TO FACILITY OPERATING LICENSE NO. NPF-63 - HARRIS, UNIT 1

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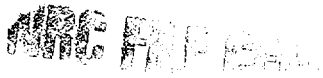

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

February 24, 2000

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

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Sincerely,

Richard J. Laufer

Richard J. Laufer, Project Manager, Section 2
Project Directorate II
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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. 95
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 July 9, 1999, as supplemented on January 19, 2000, 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. 95 , 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 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Richard P. Correia, Chief, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: February 24, 2000

ATTACHMENT TO LICENSE AMENDMENT NO. 95

FACILITY OPERATING LICENSE NO. NPF-63

DOCKET NO. 50-400

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove Pages	Insert Pages
v	v
2-4	2-4
2-10	2-10
3/4 2-5	3/4 2-5
3/4 2-9	3/4 2-9
3/4 2-10	3/4 2-10
3/4 2-10a	3/4 2-10a
3/4 2-10b	3/4 2-10b
3/4 2-14	3/4 2-14
B 3/4 2-2a	B 3/4 2-2a
B 3/4 2-4	B 3/4 2-4
B 3/4 2-5	B 3/4 2-5
B 3/4 2-6	B 3/4 2-6
----------	B 3/4 2-6a

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LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

TABLE 2.2-1

REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TOTAL ALLOWANCE (TA)	Z	SENSOR ERROR (S)	TRIP SETPOINT	ALLOWABLE VALUE
1. Manual Reactor Trip	N.A.	N.A.	N.A.	N.A.	N.A.
2. Power Range, Neutron Flux					
a. High Setpoint	7.5	4.56	0	≤ 109% of RTP**	≤ 111.1% of RTP**
b. Low Setpoint	8.3	4.56	0	≤ 25% of RTP**	≤ 27.1% of RTP**
3. Power Range, Neutron Flux, High Positive Rate	1.6	0.5	0	≤ 5% of RTP** with a time constant ≥ 2 seconds	≤ 6.3% of RTP** with a time constant ≥ 2 seconds
4. Power Range, Neutron Flux, High Negative Rate	1.6	0.5	0	≤ 5% of RTP** with a time constant ≥ 2 seconds	≤ 6.3% of RTP** with a time constant ≥ 2 seconds
5. Intermediate Range, Neutron Flux	17.0	8.41	0	≤ 25% of RTP**	≤ 30.9% of RTP**
6. Source Range, Neutron Flux	17.0	10.01	0	≤ 10^5 cps	≤ 1.4 x 10^5 cps
7. Overtemperature ΔT	8.7	6.02	Note 5	See Note 1	See Note 2
8. Overpower ΔT	4.7	1.50	1.9	See Note 3	See Note 4
9. Pressurizer Pressure-Low	5.0	2.21	1.5	≥ 1960 psig	≥ 1946 psig
10. Pressurizer Pressure-High	7.5	5.01	0.5	≤ 2385 psig	≤ 2399 psig
11. Pressurizer Water Level-High	8.0	2.18	1.5	≤ 92% of instrument span	≤ 93.8% of instrument span

**RTP = RATED THERMAL POWER

TABLE NOTATIONS

NOTE 3: (Continued)

K_6 = 0.002/°F for T > T" and K_6 = 0 for T ≤ T",

T = As defined in Note 1,

T" = Indicated T_{avg} at RATED THERMAL POWER (Calibration temperature for ΔT instrumentation, ≤ 580.8°F),

S = As defined in Note 1, and

$f_2(\Delta I)$ = 0 for all ΔI.

NOTE 4: The channel's maximum Trip Setpoint shall not exceed its computed Trip Setpoint by more than 2.3% ΔT span.

NOTE 5: The sensor error for temperature is 1.9 and 1.1 for pressure.

NOTE 6: The sensor error for steam flow is 0.9, for feed flow is 1.5, and for steam pressure is 0.75.

3/4.2.2 HEAT FLUX HOT CHANNEL FACTOR - $F_Q(Z)$

LIMITING CONDITION FOR OPERATION

3.2.2 $F_Q(Z)$ shall be within the limits specified in the COLR.

APPLICABILITY: MODE 1.

ACTION:

With $F_Q(Z)$ exceeding its limit:

a. Reduce THERMAL POWER at least 1% for each 1% $F_Q(Z)$ exceeds the limit within 15 minutes and similarly reduce the Power Range Neutron Flux-High Trip Setpoints within the next 8 hours; POWER OPERATION may proceed for up to a total of 72 hours; subsequent POWER OPERATION may proceed provided the Overpower ΔT Trip Setpoints have been reduced at least 1% for each 1% $F_Q(Z)$ exceeds the limit. Otherwise, be in at least MODE 2 within 6 hours.

b. Identify and correct the cause of the out-of-limit condition prior to increasing THERMAL POWER above the reduced limit required by ACTION a., above; THERMAL POWER may then be increased provided $F_Q(Z)$ is demonstrated through incore mapping to be within its limit.

3/4.2.3 NUCLEAR ENTHALPY RISE HOT CHANNEL FACTOR

LIMITING CONDITION FOR OPERATION

3.2.3 $F_{\Delta H}$ shall be within the limits specified in the COLR.

APPLICABILITY: MODE 1.

ACTION:

a. With $F_{\Delta H}$ outside the limits given in 3.2.3:

1. Within 4 hours either:

a) Restore $F_{\Delta H}$ to within the limits given in 3.2.3, or

b) Reduce THERMAL POWER to less than 50% of RATED THERMAL POWER and, reduce Power Range Neutron Flux Trip setpoints to less than or equal to 55% of RATED THERMAL POWER within the next 4 hours.

3/4.2.3 NUCLEAR ENTHALPY RISE HOT CHANNEL FACTOR

LIMITING CONDITION FOR OPERATION

ACTION (Continued):

2. Within 24 hours of $F_{\Delta H}$ initially being outside the limits of 3.2.3, verify through incore flux mapping that $F_{\Delta H}$ is within the limits given in 3.2.3.

3. Subsequent POWER OPERATION may proceed provided that $F_{\Delta H}$ is demonstrated through incore flux mapping to be within acceptable limits prior to exceeding the following THERMAL POWER levels*:

   a) 50% RATED THERMAL POWER
   b) 75% RATED THERMAL POWER
   c) Within 24 hours of attaining greater than or equal to 95% RATED THERMAL POWER

b. With the requirements of ACTION 3.2.3.a not met, reduce THERMAL POWER to less than 5% of RATED THERMAL POWER within the next 6 hours.

* THERMAL POWER does not have to be reduced to comply with this ACTION.

3/4.2.3 NUCLEAR ENTHALPY RISE HOT CHANNEL FACTOR

SURVEILLANCE REQUIREMENTS

4.2.3.1 The provisions of Specification 4.0.4 are not applicable.

4.2.3.2 $F_{\Delta H}$ shall be determined to be within acceptable limits:

a. Prior to operation above 75% of RATED THERMAL POWER after each fuel loading, and

b. At least once per 31 Effective Full Power Days thereafter.

Figure 3.2-3 Deleted

POWER DISTRIBUTION LIMITS

3/4.2.5 DNB PARAMETERS

LIMITING CONDITION FOR OPERATION

3.2.5 The following DNB-related parameters shall be maintained within the following limits:

a. Reactor Coolant System $T_{avg} \leq 586.1°F$ after addition for instrument uncertainty, and

b. Pressurizer Pressure $\geq$ 2185 psig* after subtraction for instrument uncertainty, and

c. RCS total flow rate $\geq$ 293,540 gpm after subtraction for instrument uncertainty.

APPLICABILITY: MODE 1.

ACTION:

With any of the above parameters not within its specified limit, restore the parameter to within its limit within 2 hours or reduce THERMAL POWER to less than 5% of RATED THERMAL POWER within the next 6 hours.

SURVEILLANCE REQUIREMENTS

4.2.5.1 Each of the parameters shown in Specification 3.2.5 shall be verified to be within its limit at least once per 12 hours.

4.2.5.2 Verify, by precision heat balance, that RCS total flow rate is within its limit at least once per 18 months.**

* This limit is not applicable during either a THERMAL POWER Ramp in excess of ±5% RATED THERMAL POWER per minute or a THERMAL POWER step change in excess of ±10% RATED THERMAL POWER.

** Required to be performed within 24 hours after $\geq$ 95% RATED THERMAL POWER.

3/4.2.2 AND 3/4.2.3 HEAT FLUX HOT CHANNEL FACTOR AND NUCLEAR ENTHALPY RISE HOT CHANNEL FACTOR

The limits on heat flux hot channel factor and enthalpy rise hot channel factor ensure that: (1) the design limits on peak local power density and minimum DNBR are not exceeded and (2) in the event of a LOCA the peak fuel clad temperature will not exceed the 2200°F ECCS acceptance criteria limit.

$F_{\Delta H}$ is not directly measurable but is inferred from a power distribution map obtained with the movable incore detector system. $F_{\Delta H}$ and $F_Q(Z)$ will normally only be determined periodically as specified in Specifications 4.2.2 and 4.2.3. This periodic surveillance is sufficient to ensure that the limits are maintained provided:

a. Control rods in a single group move together with no individual rod insertion differing by more than ± 12 steps, indicated, from the group demand position;

b. Control rod groups are sequenced with overlapping groups as described in Specification 3.1.3.6;

HEAT FLUX HOT CHANNEL FACTOR NUCLEAR ENTHALPY RISE HOT CHANNEL FACTOR (Continued)

c. The control rod insertion limits of Specifications 3.1.3.5 and 3.1.3.6 are maintained; and

d. The axial power distribution, expressed in terms of AXIAL FLUX DIFFERENCE, is maintained within the limits.

$F_{\Delta H}$ will be maintained within its limits provided Conditions a. through d. above are maintained.

For the FSAR Chapter 15 analyses reliant on the Power Range Neutron Flux - High Trip Setting trip function, reduction of the Setpoint by approximately the same percentage as the required power reduction ensures DNBR margin is maintained.

When an $F_{\Delta H}$ measurement is taken, an allowance for measurement error must be applied prior to comparing to the $F_{\Delta H}^{RTP}$ limit(s) specified in the CORE OPERATING LIMITS REPORT (COLR). An allowance of 4% is appropriate for a full-core map taken with the Incore Detector Flux Mapping System.

Margin is maintained between the safety analysis limit DNBR and the design limit DNBR. The margin is more than sufficient to offset any rod bow penalty and transition core penalty.

When an F_Q measurement is taken, an allowance for both experimental error and manufacturing tolerance must be made. An allowance of 5% is appropriate for a full-core map taken with the Incore Detector Flux Mapping System, and a 3% allowance is appropriate for manufacturing tolerance.

The hot channel factor $F_Q^M(Z)$ is measured periodically and increased by a cycle and height dependent power factor V(Z) to provide assurance that the

HEAT FLUX HOT CHANNEL FACTOR AND NUCLEAR ENTHALPY RISE HOT CHANNEL FACTOR (Continued)

limit on the hot channel factor, $F_Q(Z)$, is met. V(Z) accounts for the effects of normal operation transients and was determined from expected power control maneuvers over the full range of burnup conditions in the core. The V(Z) function is specified in the COLR.

3/4.2.4 QUADRANT POWER TILT RATIO

The QUADRANT POWER TILT RATIO limit assures that the radial power distribution satisfies the design values used in the power capability analysis. Radial power distribution measurements are made during STARTUP testing and periodically during power operation.

The limit of 1.02, at which corrective action is required, provides DNB and linear heat generation rate protection with x-y plane power tilts. A limiting tilt of 1.025 can be tolerated before the margin for uncertainty in F_Q is depleted. A limit of 1.02 was selected to provide an allowance for the uncertainty associated with the indicated power tilt.

The 2-hour time allowance for operation with a tilt condition greater than 1.02 but less than 1.09 is provided to allow identification and correction of a dropped or misaligned control rod. In the event such action does not correct the tilt, the margin for uncertainty on F_Q is reinstated by reducing the maximum allowed power by 3% for each percent of tilt in excess of 1.

For purposes of monitoring QUADRANT POWER TILT RATIO when one excore detector is inoperable, the movable incore detectors are used to confirm that the normalized symmetric power distribution is consistent with the QUADRANT POWER TILT RATIO. The incore detector monitoring is done with a full incore flux map or two sets of four symmetric thimbles. The preferred sets of four symmetric thimbles is a unique set of eight detector locations. These locations are C-8, E-5, E-11, H-3, H-13, L-5, L-11, N-8. If other locations must be used, a special report to NRC should be submitted within 30 days in accordance with 10CFR50.4.

3/4.2.5 DNB PARAMETERS

The limits on the DNB-related parameters assure that each of the parameters are maintained within the normal steady-state envelope of operation assumed in the transient and accident analyses. The limits are consistent with the initial FSAR assumptions and have been analytically demonstrated adequate to maintain a minimum DNBR that is equal to or greater than the design DNBR value throughout each analyzed transient. The indicated T_{avg} value and the indicated pressurizer pressure value are compared to analytical limits of 586.1°F and 2185 psig, respectively, after an allowance for measurement uncertainty is included.

When RCS flow rate is measured, an additional allowance is necessary prior to comparison with the limit of Specification 3.2.5.c. Specifically for the precision calorimetric heat balance, a normal RCS flow rate error of 2.1% will be included.

Potential fouling of the feedwater venturi, which might not be detected, could bias the result from the precision heat balance in a non-conservative manner. Therefore, a penalty of 0.1% for undetected fouling of the feedwater venturi, raises the nominal flow measurement allowance to 2.2% for no venturi fouling. Any fouling which might bias the RCS flow rate measurement greater than 0.1% can be detected by monitoring and trending various plant parameters.

3/4.2.5 DNB PARAMETERS (Continued)

If detected, action shall be taken before performing subsequent precision heat balance measurements, i.e. either the effect of the fouling shall be quantified and compensated for in the RCS flow rate measurement or the venturi shall be cleaned to eliminate the fouling.

Surveillance 4.2.5.1 ensures that temperature and pressure parameters, through instrument readout, are restored within their respective limits following load changes and other expected transient operation. The periodic surveillance of indicated RCS flow is intended to detect flow degradation.

Surveillance 4.2.5.2 allows entry into MODE 1, without having performed the surveillance, and placement of the unit in the best condition for performing the surveillance. Measurement of RCS flow rate by performance of a precision calorimetric heat balance allows the installed RCS flow instrumentation to be calibrated and verifies that the actual RCS flow rate is greater than or equal to the minimum required RCS flow rate. The frequency of 18 months reflects the importance of verifying flow following a refueling outage, where work activities were performed that could affect RCS flow. Performance of a precision calorimetric at other times are unnecessary unless changes were introduced that would substantially reduce RCS flow and are likely to produce non-conservative results. The surveillance requirement to perform the precision calorimetric within 24 hours after exceeding 95% RTP is intended to stress the importance of collecting plant flow data as soon as practical after reaching a stable power level that is sufficient for performing the test and in recognition that some plants have experienced feedwater venturi fouling and other phenomena that are more probable as time elapses. If the precision calorimetric data can not be collected in the required time period, it is necessary to reduce power to less than 95% RTP until preparations are complete for collecting precision calorimetric data. Reducing power to less than 95%, resets the allowable time period requirement to perform the precision calorimeter within 24 hours after exceeding 95% RTP.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

CAROLINA POWER & LIGHT COMPANY

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1

DOCKET NO. 50-400

1.0 INTRODUCTION

By letter dated July 9, 1999, as supplemented on January 19, 2000, Carolina Power & Light Company (CP&L, the licensee) requested a revision to the Technical Specifications (TS) for the Shearon Harris Nuclear Power Plant (HNP). The proposed amendment would revise HNP TS 3/4.2.2, "Heat Flux Hot Channel Factor - $F_Q(Z)$," TS 3/4.2.3, "RCS Flow Rate And Nuclear Enthalpy Rise Hot Channel Factor," TS 3/4.2.5, "DNB Parameters," an associated note in TS Table 2.2-1, and associated Bases. Specifically, the proposed amendment would: 1) remove the allowance for reduced power operation for reduced Reactor Coolant System (RCS) flow rate conditions; 2) separate the requirements for F delta H and RCS flow rate in the format prescribed by NUREG-1431, Revision 1, "Standard Technical Specifications, Westinghouse Plants," dated April 1995; and 3) implement the guidance of NUREG-1431, Revision 1, and NRC Generic Letter (GL) 88-16, "Removal of Cycle-Specific Parameter Limits from Technical Specifications," for TS 3/4.2.2 and TS 3/4.2.3 and associated Bases by removing cycle-specific parameters and placing that information into the Core Operating Limits Report (COLR).

2.0 BACKGROUND

On July 27, 1994, the NRC issued License Amendment No. 50 to the HNP facility operating license. The purpose of the amendment was to allow reduced power operation when RCS flow rate was below the 100% specified flow rate limit. Amendment No. 50 added TS Figure 3.2.3, a graph of flow rate versus power, which showed the permissible, restricted, and prohibited regions of operation.

The licensee had requested the TS change for Amendment No. 50 as a contingency for modifications planned for HNP in Cycle 6. These changes included a reduction in RCS hot leg temperature, a new fuel vendor and a new fuel design, and the elimination of the RCS resistance temperature detector (RTD) bypass manifold. The licensee was concerned that these changes could result in a measured RCS flow that was below the minimum RCS flow to support 100% reactor power operation. Subsequent to making the changes, the licensee determined that the changes implemented for Cycle 6 actually had a minimal impact on RCS flow. The resulting TS change, however, required implementation of the limiting condition for operation (LCO) Action requirements in situations which were not anticipated when the TS change was requested. The literal reading of the LCO requires operation within the region of

permissible operation shown on Figure 3.2-3, and Action c. of TS 3.2.3 directs remedial measures for being within the region of prohibited operation.

Reactor Power as referred to in this submittal is a percentage of Rated Thermal Power for HNP (2775 MWt). Reactor Power as determined by calorimetric has fluctuated above 100.0% for short periods of time. When Reactor Power is above 100%, HNP is currently required by TS to implement Action c. of LCO 3.2.3, since the combination of indicated RCS total flow rate and Thermal Power is in the prohibited operation region as shown on Figure 3.2-3. This has resulted in an unnecessary burden to perform a reactor core flux map when reactor power momentarily fluctuates above 100.0%.

3.0 EVALUATION

3.1 RCS flow rate

The current RCS flow rate requirements specified in TS 3/4.2.3, "RCS Flow Rate and Nuclear Enthalpy Rise Hot Channel Factor," were implemented with the approval of Amendment No. 50 to the HNP facility operating license. The current TS states in part:

> "The combination of indicated Reactor Coolant System (RCS) total flow rate and THERMAL POWER shall be maintained within the region of permissible operation shown on Figure 3.2-3 for three loop operation..."

Figure 3.2-3, "Allowed Measured Reactor Coolant System Total Flow Rate versus Power - Three Loops in Operation," allows reduced power operation at reduced RCS flow rates. The "Permissible Operation Region" of Figure 3.2-3 does not allow operation beyond 100% power. As discussed above, the implementation of Amendment No. 50 added an unintended requirement to take remedial actions, including performing a reactor core flux map when reactor power momentarily fluctuates above 100.0%.

The licensee has proposed removing the allowance for reduced power operation at reduced RCS flow rate that was approved in Amendment 50, and adopting TS requirements for RCS flow rate that are consistent with NUREG-1431.

The proposed change would remove the requirements that were added as part of Amendment No. 50. Figure 3.2-3 and references to its use would be deleted. Table 2.2-1, Note 7, which was added with Amendment 50 to reduce the reactor trip setpoint when operating at reduced power and RCS flow conditions, would also be deleted. This proposed change removes the ability for continued power operation if the RCS flow limit is not met. Since this change returns the specifications to the more restrictive specification that was in place prior to Amendment No. 50, the staff finds it acceptable.

The proposed change would also relocate the RCS flow rate requirements from TS 3/4.2.3 to TS 3/4.2.5, "DNB Parameters," consistent with NUREG-1431. TS 3/4.2.3 would be renamed, "Nuclear Enthalpy Rise Hot Channel Factor." The requirements for RCS flow rate would be

added to the current TS 3/4.2.5 requirement for RCS pressure and temperature. LCO 3.2.5.b would be changed from:

> "Indicated Pressurizer Pressure ≥ 2185 psig* after subtraction for instrument uncertainty."

to: "Pressurizer Pressure ≥ 2185 psig* after subtraction for instrument uncertainty, and RCS total flow rate ≥ 293,540 gpm after subtraction for instrument uncertainty."

LCO 3.2.5 Action statement would be changed from:

> "With any of the above parameters exceeding its indicated limit, restore the parameter to within its limit within 2 hours or reduce THERMAL POWER to less that 5% of RATED THERMAL POWER within the next 4 hours."

to: "With any of the above parameters not within its specified limit, restore the parameter to within its limit within 2 hours or reduce THERMAL POWER to less that 5% of RATED THERMAL POWER within the next 6 hours."

The current Surveillance Requirement (SR) 4.2.5, requiring each of the parameters to be verified within its limits at least once per 12 hours, would be renumbered SR 4.2.5.1, and an additional requirement, SR 4.2.5.2 would be added. The proposed SR 4.2.5.2 states:

> "Verify, by precision heat balance, that RCS total flow rate is within its limit at least once per 18 months.**
>
> ** Required to be performed within 24 hours after ≥ 95% RATED THERMAL POWER."

Including the RCS flow rate specification in the TS for "DNB Parameters" is consistent with NUREG-1431, and the proposed value for RCS total flow rate is the same value that was specified prior to the implementation of Amendment No. 50. The revised Action Statement completion time of 6 hours for reducing power to less than 5% if the parameter is not restored in 2 hours is consistent with NUREG-1431. The Completion Time of 6 hours is reasonable to reach the required plant conditions in an orderly manner. The proposed SR 4.2.5.2 is the same as required in the current RCS flow rate TS with the exception of the note. The proposed note is consistent with NUREG-1431. It allows entry into MODE 1, without having performed the SR, and placement of the unit in the best condition for performing the SR. This exception is appropriate since the heat balance requires the plant to be at greater than 95% Rated Thermal Power (RTP) to obtain the stated RCS flow rate accuracies. The Surveillance shall be performed within 24 hours after reaching greater than or equal to 95% RTP. The licensee has determined that RCS flow will be in the best condition for performing proposed surveillance 4.2.5.2 at greater than or equal to 95% RTP. Based on the above, the staff finds the proposed relocation of RCS flow rate requirements from TS 3/4.2.3 to TS 3/4.2.5, and the proposed changes to TS 3/4.2.5 acceptable.

3.2 Removal of Cycle-Specific Parameter Limits from TS 3/4.2.2 and TS 3/4.2.3

NRC GL 88-16, dated October 3, 1988, was issued to encourage licensees to amend the Technical Specifications related to cycle-specific parameters. The GL stated that the processing of changes to TS that are developed using an NRC-approved methodology is an unnecessary burden on licensee and NRC resources. The GL provided guidance for relocation of certain cycle-specific core operating limits from TS to the COLR. This would allow changes to the values of the core operating limits without prior NRC approval as long as an NRC-approved methodology for the parameter limit calculation is followed.

The licensee has proposed revising TS 3/4.2.2, "Heat Flux Hot Channel Factor - $F_Q(Z)$," and renamed TS 3/4.2.3, "Nuclear Enthalpy Rise Hot Channel Factor," and the associated Bases by removing cycle-specific parameters and placing that information into the COLR. In GL 88-16, the NRC staff concluded that it is essential to safety that the plant is operated within the bounds of cycle-specific parameter limits and that a requirement to maintain the plant within the appropriate bounds must be retained in the TS. However, the specific values of these limits may be modified by the licensees, without affecting nuclear safety, provided that these changes are determined using an NRC-approved methodology and consistent with all applicable limits of the plant safety analysis.

The licensee does not intend to alter the methodologies for any parameter limit calculation as a result of this change. The proposed change is in accordance with the plant safety analysis. The relocated portions of the proposed change will be included in the COLR, plant procedure PLP-106, in accordance with GL 88-16. The licensee will submit a copy of the COLR and any changes as required by Section 6 of the HNP TS. Additionally, changes made to the COLR as a result of this proposed change and future changes to the COLR will be made in accordance with 10 CFR 50.59.

The licensee's proposal to relocate the cycle-specific parameters from TS 3/4.2.2 and TS 3/4.2.3 to the COLR is consistent with the guidance of GL 88-16. The staff, therefore, finds the proposed changes acceptable.

In addition to relocating the plant-specific parameters to the COLR, the licensee has also revised TS 3/4.2.2 and TS 3/4.2.3 to adopt action statements and completion times consistent with NUREG-1431. For TS 3/4.2.2 this resulted in increasing the completion time for reducing the Power Range Neutron Flux-High Trip Setpoints from 4 hours to 8 hours. The Completion Time of 8 hours is acceptable considering the small likelihood of a severe transient in this time period and the preceding prompt reduction in THERMAL POWER in accordance with the first Action of TS 3/4.2.2. The staff, therefore, finds the proposed change acceptable.

For TS 3/4.2.3 this resulted in increasing the completion time for restoring $F_{\Delta H}$ or reducing power to less than 50% from 2 hours to 4 hours. The Completion Time of 4 hours provides an acceptable time to restore $F_{\Delta H}$ to within its limits or to reduce power from full power operation without allowing the plant to remain in an unacceptable condition for an extended period of time. The staff, therefore, finds the proposed change acceptable.

4.0 STATE CONSULTATION

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

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes the 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 (64 FR 43765). 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.

6.0 CONCLUSION

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.

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Date: February 24, 2000

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