

June 15, 1987

Docket No. 50-382

Mr. J. G. Dewease
Senior Vice President - Nuclear Operations
Louisiana Power and Light Company
317 Baronne Street, Mail Unit 17
New Orleans, Louisiana 70160

Dear Mr. Dewease:

SUBJECT: ISSUANCE OF AMENDMENT NO. 19 TO FACILITY OPERATING LICENSE
NPF-38 - WATERFORD STEAM ELECTRIC STATION, UNIT 3
(TAC NOS. 64889, 64891 AND 64892)

The Commission has issued the enclosed Amendment No. 19 to Facility Operating License No. NPF-38 for the Waterford Steam Electric Station, Unit 3. The amendment consists of changes to the Technical Specifications in response to your applications dated February 23, 1987.

The amendment changes the Appendix A Technical Specifications by: 1) raising the emergency feedwater initiation setpoint from 30% to 36.3% of wide range level; (2) raising the required refueling water storage pool level from 82% to 83%; and (3) raising the required safety injection tank level from 60% to 61%.

A copy of the Safety Evaluation supporting the amendment is also enclosed. Notice of Issuance will be included in the Commission's next Bi-weekly Federal Register notice.

Sincerely,

15/

James H. Wilson, Project Manager
Project Directorate - IV
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 19 to NPF-38
2. Safety Evaluation

cc w/enclosures:

See next page

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6/15/87

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PNoonan	JWilson:as		JCalvo	
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Mr. Jerrold G. Dewease
Louisiana Power & Light Company

Waterford 3

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

LOUISIANA POWER AND LIGHT COMPANY

DOCKET NO. 50-382

WATERFORD STEAM ELECTRIC STATION, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 19
License No. NPF-38

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The applications for amendment by Louisiana Power and Light Company (the licensee) dated February 23, 1987, comply 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 applications, 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.

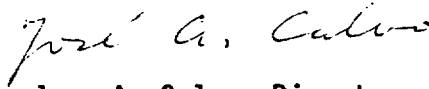
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C(2) of Facility Operating License No. NPF-38 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 19, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Jose A. Calvo, Director
Project Directorate - IV
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: June 15, 1987

ATTACHMENT TO LICENSE AMENDMENT NO. 19
TO FACILITY OPERATING LICENSE NO. NPF-38
DOCKET NO. 50-382

Replace the following pages of the Appendix A Technical Specifications with the attached pages. The revised pages are identified by Amendment number and contain vertical lines indicating the areas of change. The corresponding overleaf pages are also provided to maintain document completeness.

<u>Remove</u>	<u>Insert</u>
3/4 1-14	3/4 1-14
3/4 3-20	3/4 3-20
3/4 3-21	3/4 3-21
3/4 5-1	3/4 5-1
3/4 5-9	3/4 5-9

REQUIRED STORED BORIC ACID VOLUME AS A FUNCTION OF CONCENTRATION

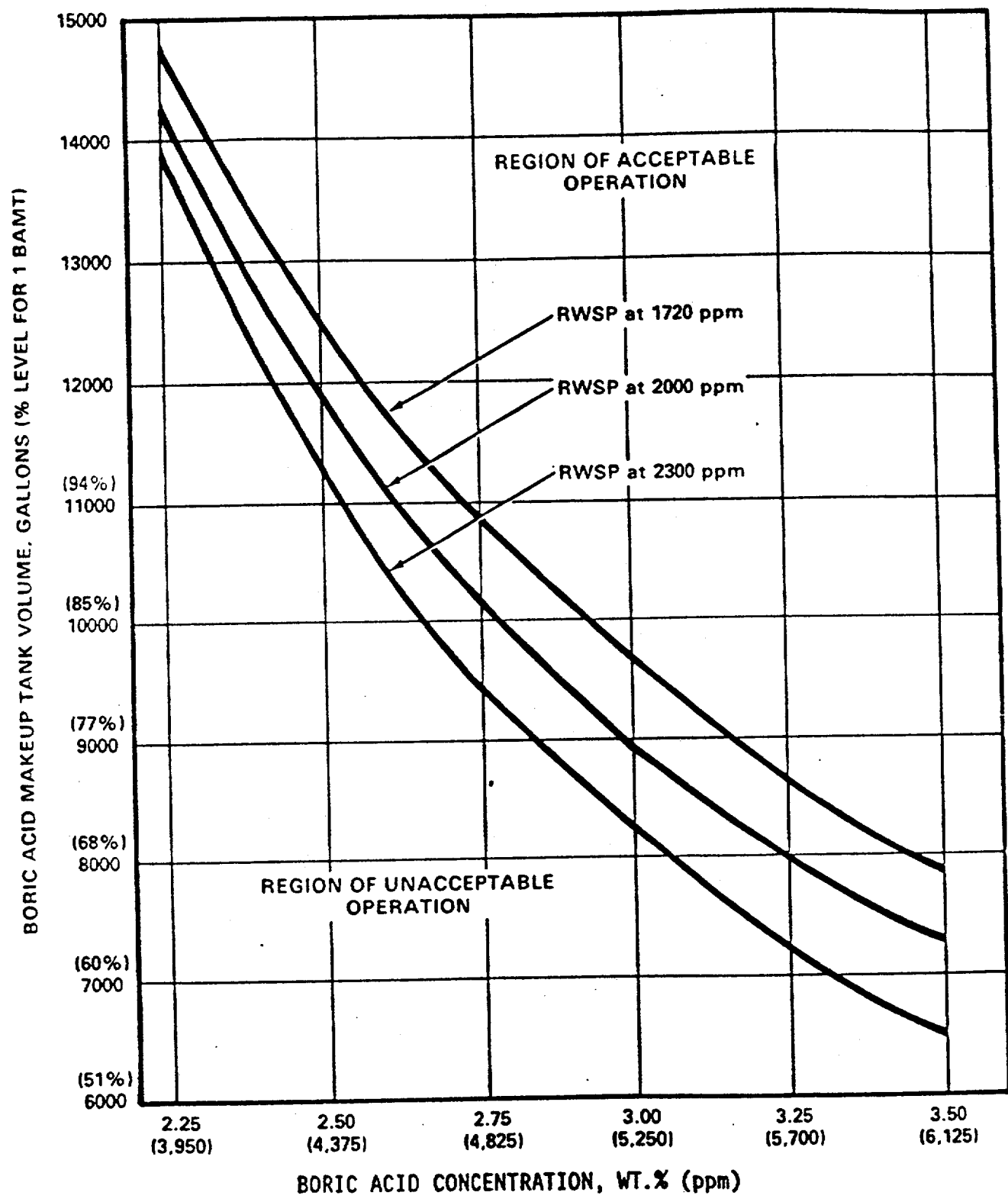


FIGURE 3.1-1

REACTIVITY CONTROL SYSTEMS

BORATED WATER SOURCES - OPERATING

LIMITING CONDITION FOR OPERATION

- 3.1.2.8 Each of the following borated water sources shall be OPERABLE:
- a. At least one of the following sources:
 - 1) One boric acid makeup tank, with the tank contents in accordance with Figure 3.1-1, or
 - 2) Two boric acid makeup tanks, with the combined contents of the tanks in accordance with Figure 3.1-1, and
 - b. The refueling water storage pool with:
 1. A minimum contained borated water volume of 475,500 gallons (83% of indicated level), and
 2. A boron concentration of between 1720 and 2300 ppm of boron, and
 3. A solution temperature between 55°F and 100°F.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

- a. With the above required boric acid makeup tank(s) inoperable, restore the tank(s) to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and borated to a SHUTDOWN MARGIN equivalent to the requirements of Specification 3.1.1.1 or 3.1.1.2, whichever is applicable; restore the above required boric acid makeup tank(s) to OPERABLE status within the next 7 days or be in COLD SHUTDOWN within the next 30 hours.
- b. With the refueling water storage pool inoperable, restore the pool to OPERABLE status within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

- 4.1.2.8 Each borated water source shall be demonstrated OPERABLE:
- a. At least once per 24 hours by verifying the RWSP temperature when the Reactor Auxiliary Building air temperature is less than 55°F or greater than 100°F.
 - b. At least once per 24 hours by verifying the BAMT temperature is above 55°F when the Reactor Auxiliary Building air temperature is less than 55°F.
 - c. At least once per 7 days by:
 1. Verifying the boron concentration in the water, and
 2. Verifying the contained borated water volume of the water source.

TABLE 3.3-4

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP VALUES

<u>FUNCTIONAL UNIT</u>	<u>TRIP SETPOINT</u>	<u>ALLOWABLE VALUES</u>
1. SAFETY INJECTION (SIAS)		
a. Manual (Trip Buttons)	Not Applicable	Not Applicable
b. Containment Pressure - High	≤ 17.1 psia	≤ 17.3 psia
c. Pressurizer Pressure - Low	≥ 1684 psia ⁽¹⁾	≥ 1644 psia ⁽¹⁾
d. Automatic Actuation Logic	Not Applicable	Not Applicable
2. CONTAINMENT SPRAY (CSAS)		
a. Manual (Trip Buttons)	Not Applicable	Not Applicable
b. Containment Pressure -- High-High	≤ 17.7 psia	≤ 18.0 psia
c. Automatic Actuation Logic	Not Applicable	Not Applicable
3. CONTAINMENT ISOLATION (CIAS)		
a. Manual CIAS (Trip Buttons)	Not Applicable	Not Applicable
b. Containment Pressure - High	≤ 17.1 psia	≤ 17.3 psia
c. Pressurizer Pressure - Low	≥ 1684 psia ⁽¹⁾	≥ 1644 psia ⁽¹⁾
d. Automatic Actuation Logic	Not Applicable	Not Applicable
4. MAIN STEAM LINE ISOLATION		
a. Manual (Trip Buttons)	Not Applicable	Not Applicable
b. Steam Generator Pressure - Low	≥ 764 psia ⁽²⁾	≥ 748 psia ⁽²⁾
c. Containment Pressure - High	≤ 17.1 psia	≤ 17.3 psia
d. Automatic Actuation Logic	Not Applicable	Not Applicable

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP VALUES

<u>FUNCTIONAL UNIT</u>	<u>TRIP VALUE</u>	<u>ALLOWABLE VALUES</u>
5. SAFETY INJECTION SYSTEM SUMP RECIRCULATION (RAS)		
a. Manual RAS (Trip Buttons)	Not Applicable	Not Applicable
b. Refueling Water Storage Pool - Low	10.0% (57,967 gallons)	9.3% (53,910 gallons)
c. Automatic Actuation Logic	Not Applicable	Not Applicable
6. LOSS OF POWER		
a. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage)	\geq 3245 volts	\geq 3245 volts
b. 480 V Emergency Bus Undervoltage	\geq 372 volts	\geq 354 volts
c. 4.16 kV Emergency Bus Undervoltage (Degraded Voltage)	\geq 3640 volts	\geq 3604 volts
7. EMERGENCY FEEDWATER (EFAS)		
a. Manual (Trip Buttons)	Not Applicable	Not Applicable
b. Steam Generator (1&2) Level - Low	\geq 27.4% ⁽³⁾ ⁽⁴⁾	\geq 26.7% ⁽³⁾ ⁽⁴⁾
c. Steam Generator ΔP - High (SG-1 > SG-2)	\leq 127.6 psid	\leq 136.6 psid
d. Steam Generator ΔP - High (SG-2 > SG-1)	\leq 127.6 psid	\leq 136.6 psid
e. Steam Generator (1&2) Pressure - Low	\geq 764 psia ⁽²⁾	\geq 748 psia ⁽²⁾
f. Automatic Actuation Logic	Not Applicable	Not Applicable
g. Control Valve Logic (Wide Range SG Level - Low)	\geq 36.3% ⁽³⁾ ⁽⁵⁾	\geq 35.3% ⁽³⁾ ⁽⁵⁾

WATERFORD - UNIT 3

3/4 3-20

AMENDMENT NO. 19

TABLE 3.3-4 (Continued)

TABLE NOTATIONS

- (1) Value may be decreased manually, to a minimum of 100 psia, as pressurizer pressure is reduced, provided the margin between the pressurizer and this value is maintained at less than or equal to 400 psi; the setpoint shall be increased automatically as pressurizer pressure is increased until the trip setpoint is reached. Trip may be manually bypassed below 400 psia; bypass shall be automatically removed whenever pressurizer is greater than or equal to 500 psia.
- (2) Value may be decreased manually as steam generator pressure is reduced, provided the margin between the steam generator pressure and this value is maintained at less than or equal to 200 psi; the setpoint shall be increased automatically as steam generator pressure is increased until the trip setpoint is reached.
- (3) % of this distance between steam generator upper and lower level instrument nozzles.
- (4) Requires corresponding permissive trip signal of item 7.c., 7.d., or 7.e. to actuate EFAS.
- (5) Requires corresponding EFAS trip to actuate control valves.

TABLE 3.3-5

ENGINEERED SAFETY FEATURES RESPONSE TIMES

<u>INITIATING SIGNAL AND FUNCTION</u>	<u>RESPONSE TIME IN SECONDS</u>
1. <u>Manual</u>	
a. SIAS Safety Injection (ECCS) Shield Building Filtration System	Not Applicable Not Applicable
b. CSAS Containment Spray	Not Applicable
c. CIAS Containment Isolation	Not Applicable
d. MSIS Main Steam Isolation	Not Applicable
e. RAS Safety Injection System Sump Recirculation	Not Applicable
f. EFAS Emergency Feedwater Pumps	Not Applicable

3/4.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3/4.5.1 SAFETY INJECTION TANKS

LIMITING CONDITION FOR OPERATION

3.5.1 Each Reactor Coolant System safety injection tank shall be OPERABLE with:

- a. The isolation valve open,
- b. A contained borated water volume of between 1679 (78%) and 1807 (83.8%) cubic feet,
- c. Between 1720 and 2300 ppm of boron, and
- d. A nitrogen cover-pressure of between 600 and 625 psig.

APPLICABILITY: MODES 1, 2, 3*, and 4*.

ACTION:

- a. With one safety injection tank inoperable, except as a result of a closed isolation valve, restore the inoperable tank to OPERABLE status within 1 hour or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.
- b. With one safety injection tank inoperable due to the isolation valve being closed, either immediately open the isolation valve or be in at least HOT STANDBY within 1 hour and be in HOT SHUTDOWN within the next 12 hours.

SURVEILLANCE REQUIREMENTS

4.5.1 Each safety injection tank shall be demonstrated OPERABLE:

- a. At least once per 12 hours by:
 1. Verifying the contained borated water volume and nitrogen cover-pressure in the tanks, and
 2. Verifying that each safety injection tank isolation valve is open.

*With pressurizer pressure greater than or equal to 1750 psia. When pressurizer pressure is less than 1750 psia, at least three safety injection tanks must be OPERABLE, each with a minimum pressure of 235 psig and a maximum pressure of 625 psig, and a contained borated water volume of between 1332 (61%) and 1807 (83.8%) cubic feet. With all four safety injection tanks OPERABLE, each tank shall have a minimum pressure of 235 psig and a maximum pressure of 625 psig, a boron concentration of between 1720 and 2300 ppm boron, and a contained borated water volume of between 888 (39%) and 1807 (83.8%) cubic feet. In MODE 4 with pressurizer pressure less than 392 psia (700 psia for remote shutdown from LCP-43), the safety injection tanks may be isolated.

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- b. At least once per 31 days and within 6 hours after each solution volume increase of greater than or equal to 1% of tank volume by verifying the boron concentration of the safety injection tank solution.
- c. At least once per 31 days when the RCS pressure is above 1750 psia, by verifying that the isolation valve operator breakers are padlocked in the open position.
- d. At least once per 18 months by verifying that each safety injection tank isolation valve opens automatically under each of the following conditions:
 - 1. When an actual or simulated RCS pressure signal exceeds 535 psia, and
 - 2. Upon receipt of a safety injection test signal.

EMERGENCY CORE COOLING SYSTEMS

3/4.5.4 REFUELING WATER STORAGE POOL

LIMITING CONDITION FOR OPERATION

3.5.4 The refueling water storage pool shall be OPERABLE with:

- a. A minimum contained borated water volume of 475,500 gallons (83% indicated level),
- b. Between 1720 and 2300 ppm of boron, and
- c. A solution temperature of between 55°F and 100°F.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With the refueling water storage pool inoperable, restore the pool to OPERABLE status within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.5.4 The RWSP shall be demonstrated OPERABLE:

- a. At least once per 7 days by:
 1. Verifying the contained borated water volume in the pool, and
 2. Verifying the boron concentration of the water.
- b. At least once per 24 hours by verifying the RWSP temperature when the RAB air temperature is less than 55°F or greater than 100°F.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 19 TO
FACILITY OPERATING LICENSE NO. NPF-38
LOUISIANA POWER AND LIGHT COMPANY
WATERFORD STEAM ELECTRIC STATION, UNIT 3
DOCKET NO. 50-382

1.0 INTRODUCTION

By applications dated February 23, 1987, Louisiana Power and Light Company (LP&L or the licensee) requested changes to the Technical Specifications (Appendix A to Facility Operating License No. NPF-38) for the Waterford Steam Electric Station, Unit 3. The proposed changes would: 1) raise the emergency feedwater initiation setpoint from 30% to 36.3% of wide range level; 2) raise the required refueling water storage pool level from 82% to 83%; and 3) raise the required safety injection tank level from 60% to 61%.

2.0 DISCUSSION

The proposed changes to the Technical Specifications requested by the licensee are in three areas, as described below.

2.1 Emergency Feedwater Initiation Setpoint (NFP-38-53)

Table 3.3-4 identifies trip values for the Emergency Feedwater (EFW) Control Valve Logic Lo Level. Two levels are given for this parameter; 36.6% wide range with a safety injection actuation signal (SIAS) or 30.0% without a SIAS signal. The operability for this system is required for Modes 1 through 3 as protection against design basis events such as a Small Break Loss of Coolant Accident (LOCA), Steam Generator Tube Rupture or a Steam Line or Feedwater Line Break. (The 36.6% setpoint is necessary only for the large Feedwater Line Break event). The proposed change will redefine the 30.0% wide range setpoint to 36.6%, removing the dependence upon the SIAS and resulting in one Lo Level setpoint, thereby simplifying the Technical Specifications.

2.2 Minimum Required Water Level for RWSP (NPF-38-55)

The proposed change would revise Technical Specifications 3.1.2.8b.1, "Borated Water Sources - Operating" and 3.5.4a, "Refueling Water Storage Pool". Currently, the Technical Specifications require that the Refueling Water Storage Pool (RWSP) contain a minimum water volume of 475,000 gallons. The Technical Specifications refer to 82% as being equal to the required volume; however, calculations have shown that, in order to maintain the required 475,000 gallons in the RWSP, the indicated level must be equal to 82.4%. The proposed change, would conservatively "round-up" the required level to 83% instead of rounding-off" to 82%.

2.3 Minimum Required Water Level for SIT (NPF-38-56)

The proposed change would revise the note to Technical Specification 3.5.1, "Safety Injection Tanks". As presently written, the note is applicable in Modes 3 and 4 and currently allows the safety injection tank (SIT) level to be decreased to between 60% and 83.8% level when pressurizer pressure has been decreased to less than 1750 psia and only three SITs are operable. This lower level of 60% corresponds to the minimum required water volume of 1332 cubic feet that must be maintained in each of the three operable SITs; however, calculations have shown that, in order to maintain the required water volume of 1332 cubic feet, the SIT level must be 60.23%. The proposed change, therefore, would conservatively "round-up" the required level to 61% instead of "round-off" to 60%.

3.0 EVALUATION

The proposed changes to the technical specifications requested by the licensee and described in three areas above, are evaluated below.

3.1 Emergency Feedwater Initiation Setpoint (NPF-38-53)

Currently, under automatic control in the absence of SIAS, the EFW control valve positions are determined based on steam generator level and EFW flow. However, with a SIAS, the control valves are no longer controlled by flow, but rather by steam generator level only. The rate at which the valves open and close is a function of the difference between the setpoint and the actual level, and the length of time that difference exists. Currently, when the steam generator level drops to the "Lo-Lo" Level (30.0% without a SIAS, 36.3% with a SIAS), a priority open signal is sent to the valves which overrides all automatic or manual controls. Once the level raises above the applicable value, the control returns to its previous mode; either "automatic" or "manual" under operator control.

Because the setpoint increase is in the conservative direction, additional safety margin will be provided for the design basis events of concern with the exception of the Large Feedwater Line Break, which will be unaffected by the change. Raising the EFW control valve logic Lo Level setpoint has no effect on the probability of occurrence of the initiating event itself. The setpoint comes into play only when an analyzed event progresses to the point of reducing the steam generator level to the setpoint value. By raising the setpoint, feedwater will be available earlier than previously analyzed for most events, thus mitigating the consequences of the event.

Raising the EFW trip set point in a conservative direction does not create any new failure or accident path. Therefore, the proposed change does not create the possibility of occurrence of any new or different kind of accident from any accident previously evaluated.

By raising the EFW setpoint, feedwater flow will be provided earlier than assumed in the analysis for most events, resulting in an additional margin of safety for those events.

The staff concludes, therefore, that the proposed change is acceptable.

3.2 Minimum Required Level for RWSP (NPF-38-55)

This change is being proposed to correct a potential nonconservatism in the percent indicated level that corresponds to the minimum required volume that must be maintained in the RWSP. The reason for maintaining a minimum volume of borated water in the RWSP is to ensure that the available supply of water to the Emergency Core Cooling System (ECCS) is consistent with the assumptions used in the large break loss-of-coolant accident (LOCA) presented in the FSAR.

Since the proposed change increases the required level that must be maintained in the RWSP (and hence increases the required volume), there will be no affect on the LOCA analyses as described in Chapters 6 and 15 of the FSAR. Therefore, the proposed change will not involve a significant increase in the probability or consequences of any accident.

The proposed change will ensure that the indicated level of the RWSP is consistent with the volume requirement that was determined by the FSAR. There has been no physical change to plant systems, structures or components. The only change to plant procedures will be to require an increased RWSP level when performing routine surveillance tests. Therefore, the proposed change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

The intent of these specifications is to ensure that a sufficient supply of borated water is available for injection by the ECCS in the event of a LOCA. The minimum RWSP volume requirement ensures that sufficient water will be available inside the containment to permit recirculation through the safety injection pumps and back into the core. This minimum volume requirement also includes an allowance for water not usable because of RWSP discharge line location and other physical characteristics. Since the proposed change simply updates the RWSP level that corresponds to this minimum volume requirement, it will not involve a significant reduction in the margin of safety.

The staff concludes, therefore, that the proposed change is acceptable.

3.3 Minimum Required Water Level for SIT (NPF-38-56)

This change is being proposed to correct a potential non-conservatism in the percent level that corresponds to the minimum required volume that must be maintained in the SITs. The reason for maintaining a minimum volume is to ensure that, in the event of a large break loss-of-coolant accident (LOCA), the amount of water injected into the RCS from the SITs is consistent with the amount of water assumed in the large break LOCA analysis presented in the FSAR.

Since the proposed change increases the required level that must be maintained in the SIT (and hence increases the required volume), there will be no effect on the LOCA analyses described in Chapters 6 and 15 of the FSAR. Therefore, the proposed change will not involve a significant increase in the probability or consequences of any accident.

The proposed change will ensure that the level of the SITs is consistent with the volume requirement that was determined by the Safety Analysis. There has been no physical change to plant systems, structures or components. The only change to plant procedures will be to require an increased SIT level when performing routine surveillance tests. Therefore, the proposed change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

The intent of these specifications is to ensure that a sufficient volume of borated water will be immediately forced into the reactor core through each of the four cold legs in the event that the RCS pressure falls below the pressure of the safety injection tanks. This initial surge of water into the core provides the initial cooling mechanism during the large break LOCA analysis. The minimum SIT volume requirement ensures there is sufficient water in each of the SITs to perform the function

assumed in the safety analysis. Since the proposed change simply updates the SIT level that corresponds to the minimum volume requirement, it will not involve a significant reduction in the margin of safety.

The staff concludes, therefore, that the proposed change is acceptable.

4.0 CONTACT WITH STATE OFFICIAL

The NRC staff has advised the Administrator, Nuclear Energy Division, Office of Environmental Affairs, State of Louisiana of the proposed determination of no significant hazards consideration. No comments were received.

5.0 ENVIRONMENTAL CONSIDERATION

This amendment involves changes in installation or use of facility components located within the restricted area. The 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. 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 this amendment.

6.0 CONCLUSION

Based upon its evaluation of the proposed changes to the Waterford 3 Technical Specifications, the staff has concluded that: there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and such activities will be conducted in compliance with the Commission's regulations and the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public. The staff, therefore, concludes that the proposed changes are acceptable, and are hereby incorporated into the Waterford 3 Technical Specifications.

Dated: June 15, 1987

Principal Contributor: S. Sun