



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

September 13, 2010

Vice President, Operations
Entergy Operations, Inc.
Waterford Steam Electric Station, Unit 3
17265 River Road
Killona, LA 70057-3093

SUBJECT: WATERFORD STEAM ELECTRIC STATION, UNIT 3 - ISSUANCE OF
AMENDMENT RE: REQUEST TO MODIFY TECHNICAL SPECIFICATION
INFORMATION FOR TABLE 2.2-1 AND TABLE 3.3-1 (TAC NO. ME2465)

Dear Sir or Madam:

The Commission has issued the enclosed Amendment No. 228 to Facility Operating License No. NPF-38 for the Waterford Steam Electric Station, Unit 3 (Waterford 3). This amendment consists of changes to the Technical Specifications (TSs) in response to your application dated October 22, 2009.

This TS change clarifies TS Table 2.2-1 Notes (1) and (5), TS Table 3.3-1 Notes (a) and (c), and TS Table 3.3-1 Actions 2 and 3, which have resulted in Plant Protection System (PPS) redundancy issues with respect to verbatim compliance. While Waterford 3 Amendment No. 145, dated September 24, 1998, attempted to clarify TS Table 2.2-1 and Table 3.3-1 and it provided clarification of the logarithmic power use and the bistable reset, the complexity of the TS verbiage has still lead to verbatim compliance issues.

A copy of our related Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,

A handwritten signature in black ink, appearing to read "N. Kalyanam", with a horizontal line underneath the name.

N. Kalyanam, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-382

Enclosures:

1. Amendment No. 228 to NPF-38
2. Safety Evaluation

cc w/encls: Distribution via Listserv



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

ENTERGY OPERATIONS, INC.

DOCKET NO. 50-382

WATERFORD STEAM ELECTRIC STATION, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 228
License No. NPF-38

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Entergy Operations, Inc. (EOI), dated October 22, 2009, 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.

Enclosure 1

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. 228, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. EOI 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 and shall be implemented within 90 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Michael T. Markley, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Facility Operating
License No. NPF-38 and
Technical Specifications

Date of Issuance: September 13, 2010

ATTACHMENT TO LICENSE AMENDMENT NO. 228

TO FACILITY OPERATING LICENSE NO. NPF-38

DOCKET NO. 50-382

Replace the following pages of the Facility Operating License and 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.

Facility Operating License

REMOVE

INSERT

-4-

-4-

Technical Specifications

REMOVE

INSERT

2-4

2-4

3/4 3-4

3/4 3-4

3/4 3-5

3/4 3-5

3/4 3-6

3/4 3-6

or indirectly any control over (i) the facility, (ii) power or energy produced by the facility, or (iii) the licensees of the facility. Further, any rights acquired under this authorization may be exercised only in compliance with and subject to the requirements and restrictions of this operating license, the Atomic Energy Act of 1954, as amended, and the NRC's regulations. For purposes of this condition, the limitations of 10 CFR 50.81, as now in effect and as they may be subsequently amended, are fully applicable to the equity investors and any successors in interest to the equity investors, as long as the license for the facility remains in effect.

- (b) Entergy Louisiana, LLC (or its designee) to notify the NRC in writing prior to any change in (i) the terms or conditions of any lease agreements executed as part of the above authorized financial transactions, (ii) any facility operating agreement involving a licensee that is in effect now or will be in effect in the future, or (iii) the existing property insurance coverages for the facility, that would materially alter the representations and conditions, set forth in the staff's Safety Evaluation enclosed to the NRC letter dated September 18, 1989. In addition, Entergy Louisiana, LLC or its designee is required to notify the NRC of any action by equity investors or successors in interest to Entergy Louisiana, LLC that may have an effect on the operation of the facility.

- C. This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

- 1. Maximum Power Level

EOI is authorized to operate the facility at reactor core power levels not in excess of 3716 megawatts thermal (100% power) in accordance with the conditions specified herein.

- 2. Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 228, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. EOI shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

TABLE 2.2-1 (Continued)

REACTOR PROTECTIVE INSTRUMENTATION TRIP SETPOINT LIMITS

TABLE NOTATIONS

- (1) The operating bypass may be enabled above the $10^{-4}\%$ bistable setpoint and shall be capable of automatic removal whenever the operating bypass is enabled and logarithmic power is below the $10^{-4}\%$ bistable setpoint. Trip may be manually bypassed during physics testing pursuant to Special Test Exception 3.10.3.
- (2) Value may be decreased manually, to a minimum of 100 psia, as pressurizer pressure is reduced, provided the margin between the pressurizer pressure 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 pressure is greater than or equal to 500 psia.
- (3) 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.
- (4) % of the distance between steam generator upper and low level instrument nozzles.
- (5) As stored within the Core Protection Calculator (CPC). Calculation of the trip setpoint includes measurement, calculational and processor uncertainties, and dynamic allowances. The operating bypass may be enabled below the $10^{-4}\%$ bistable setpoint and shall be capable of automatic removal whenever the operating bypass is enabled and logarithmic power is above the $10^{-4}\%$ bistable setpoint. During testing pursuant to Special Test Exception 3.10.3, trip may be manually bypassed below 5% of RATED THERMAL POWER; the $10^{-4}\%$ bistable setpoint may be changed to less than or equal 5% RATED THERMAL POWER to perform the automatic removal function.
- (6) As measured by the Logarithmic Power Channels.
- (7) The setpoint may be altered to disable trip function during testing pursuant to Specification 3.10.3.

TABLE 3.3-1 (Continued)

TABLE NOTATION

*With the protective system trip breakers in the closed position, the CEA drive system capable of CEA withdrawal, and fuel in the reactor vessel.

#The provisions of Specification 3.0.4 are not applicable.

**Not applicable above a logarithmic power of 10^{-4} % RATED THERMAL POWER.

- (a) The operating bypass may be enabled above the 10^{-4} % bistable setpoint and shall be capable of automatic removal whenever the operating bypass is enabled and logarithmic power is below the 10^{-4} % bistable setpoint. Trip may be manually bypassed during physics testing pursuant to Special Test Exception 3.10.3.
- (b) Trip may be manually bypassed below 400 psia; bypass shall be automatically removed whenever pressurizer pressure is greater than or equal to 500 psia.
- (c) The operating bypass may be enabled below the 10^{-4} % bistable setpoint and shall be capable of automatic removal whenever the operating bypass is enabled and logarithmic power is above the 10^{-4} % bistable setpoint. During testing pursuant to Special Test Exception 3.10.3, trip may be manually bypassed below 5% of RATED THERMAL POWER; the 10^{-4} % bistable setpoint may be changed to less than or equal 5% RATED THERMAL POWER to perform the automatic removal function.
- (d) Trip may be bypassed during testing pursuant to Special Test Exception 3.10.3.
- (e) See Special Test Exception 3.10.2.
- (f) Each channel shall be comprised of two trip breakers; actual trip logic shall be one-out-of-two taken twice.

TABLE 3.3-1 (Continued)

ACTION STATEMENTS

With a channel process measurement circuit that affects multiple functional units inoperable or in test, bypass or trip all associated functional units as listed below:

Process Measurement Circuit	Functional Unit Bypassed/Tripped
1. Linear Power (Subchannel or Linear)	Linear Power Level - High Local Power Density - High DNBR - Low
2. Pressurizer Pressure - High	Pressurizer Pressure - High Local Power Density - High DNBR - Low
3. Containment Pressure - High	Containment Pressure - High (RPS) Containment Pressure - High (ESF)
4. Steam Generator Pressure - Low	Steam Generator Pressure - Low Steam Generator ΔP 1 and 2 (EFAS 1 and 2)
5. Steam Generator Level	Steam Generator Level - Low Steam Generator ΔP (EFAS)
6. Core Protection Calculator	Local Power Density - High DNBR - Low
7. Logarithmic Power	Logarithmic Power Level - High Local Power Density - High ⁽¹⁾ DNBR - Low ⁽¹⁾ Reactor Coolant Flow - Low ⁽¹⁾

ACTION 3 - With the number of channels OPERABLE one less than the Minimum Channels OPERABLE requirement, STARTUP and/or POWER OPERATION may continue provided the following conditions are satisfied:

- a. Verify that one of the inoperable channels has been bypassed and place the other channel in the tripped condition within 1 hour, and
- b. All functional units affected by the bypassed/tripped channel shall also be placed in the bypassed/tripped condition as listed below:

Process Measurement Circuit	Functional Unit Bypassed/Tripped
1. Linear Power (Subchannel or Linear)	Linear Power Level - High Local Power Density - High DNBR - Low

⁽¹⁾ With the operating bypass enabled.

TABLE 3.3-1 (Continued)

ACTION STATEMENTS

2.	Pressurizer Pressure - High	Pressurizer Pressure - High Local Power Density - High DNBR - Low
3.	Containment Pressure - (RPS) High	Containment Pressure - High Containment Pressure - High (ESF)
4.	Steam Generator Pressure - Low	Steam Generator Pressure - Low Steam Generator ΔP 1 and 2 (EFAS 1 and 2)
5.	Steam Generator Level	Steam Generator Level - Low Steam Generator ΔP (EFAS)
6.	Core Protection Calculator	Local Power Density - High DNBR - Low
7.	Logarithmic Power	Logarithmic Power Level - High Local Power Density - High ⁽¹⁾ DNBR - Low ⁽¹⁾ Reactor Coolant Flow - Low ⁽¹⁾

STARTUP and/or POWER OPERATION may continue until the performance of the next required CHANNEL FUNCTIONAL TEST. Subsequent STARTUP and/or POWER OPERATION may continue if one channel is restored to OPERABLE status and the provisions of ACTION 2 are satisfied.

ACTION 4 - With the number of channels OPERABLE one less than required by the Minimum Channels OPERABLE requirement, suspend all operations involving positive reactivity changes. *

ACTION 5 - With the number of channels OPERABLE one less those required by the Minimum Channels OPERABLE requirement, STARTUP and/or POWER OPERATION may continue provided the reactor trip breakers of the inoperable channel are placed in the tripped condition within 1 hour; otherwise, be in at least HOT STANDBY within 6 hours; however, one channel may be bypassed for up to 1 hour for surveillance testing per Specification 4.3.1.1.

ACTION 6 - a. With one CEAC inoperable, operation may continue for up to 7 days provided that at least once per 4 hours, each CEA is verified to be within 7 inches (indicated position) of all other CEAs in its group.

* Limited plant cooldown or boron dilution is allowed provided the change is accounted for in the calculated SHUTDOWN MARGIN.

⁽¹⁾ With the operating bypass enabled.



UNITED STATES
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WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 228 TO

FACILITY OPERATING LICENSE NO. NPF-38

ENTERGY OPERATIONS, INC.

WATERFORD STEAM ELECTRIC STATION, UNIT 3

DOCKET NO. 50-382

1.0 INTRODUCTION

By application dated October 22, 2009 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML092990199), Entergy Operations, Inc. (Entergy, the licensee), requested changes to the Technical Specifications (TSs) for Waterford Steam Electric Station, Unit 3 (Waterford 3).

This TS change clarifies TS Table 2.2-1 Notes (1) and (5), TS Table 3.3-1 Notes (a) and (c), and TS Table 3.3-1 Actions 2 and 3, which have resulted in Plant Protection System (PPS) redundancy issues with respect to verbatim compliance. While Waterford 3 Amendment No. 145, dated September 24, 1998, attempted to clarify TS Table 2.2-1 and Table 3.3-1 and it provided clarification of the logarithmic power use and the bistable reset, the complexity of the TS verbiage has still lead to verbatim compliance issues.

1.1 Proposed Changes

1.1.1 Current TS Table 2.2-1, "Reactor Protective Instrumentation Trip Setpoint Limits," Note (1) states:

Trip may be manually bypassed above $10^{-4}\%$ of RATED THERMAL POWER^{*}; bypass shall be automatically removed when THERMAL POWER^{*} is less than or equal to the reset point of the bistable. The reset point shall be within $3.0 \times 10^{-5}\%$ of RATED THERMAL POWER^{*} below the bistable setpoint which is nominally $10^{-4}\%$ of RATED THERMAL POWER^{*}. This accounts for the deadband of the bistable.

The TS Table 2.2-1, Note (1) footnote ^{*} states:

^{*}As measured by the Logarithmic Power Channels.

Entergy proposes to replace TS Table 2.2-1, Note (1) with the following:

The operating bypass may be enabled above the $10^{-4}\%$ bistable setpoint and shall be capable of automatic removal whenever the operating bypass is enabled and logarithmic power is below the $10^{-4}\%$ bistable setpoint. Trip may be manually bypassed during physics testing pursuant to Special Test Exception 3.10.3.

The footnote is deleted.

- 1.1.2 Current TS Table 2.2-1, "Reactor Protective Instrumentation Trip Setpoint Limits" Note (5) states:

As stored within the Core Protection Calculator (CPC). Calculation of the trip setpoint includes measurement, calculational and processor uncertainties, and dynamic allowances. Trip may be manually bypassed below $10^{-4}\%$ of RATED THERMAL POWER^{*}; bypass shall be automatically removed when THERMAL POWER^{*} is greater than or equal to $10^{-4}\%$ of RATED THERMAL POWER.

The TS Table 2.2-1, Note (5) footnote ^{*} states:

^{*}As measured by the Logarithmic Power Channels.

Entergy proposes to replace TS Table 2.2-1 Note (5) with the following:

As stored within the Core Protection Calculator (CPC). Calculation of the trip setpoint includes measurement, calculational and processor uncertainties, and dynamic allowances. The operating bypass may be enabled below the $10^{-4}\%$ bistable setpoint and shall be capable of automatic removal whenever the operating bypass is enabled and logarithmic power is above the $10^{-4}\%$ bistable setpoint. During testing pursuant to Special Test Exception 3.10.3, trip may be manually bypassed below 5% of RATED THERMAL POWER; the $10^{-4}\%$ bistable setpoint may be changed to less than or equal to 5% RATED THERMAL POWER to perform the automatic removal function.

The footnote is deleted.

- 1.1.3 Currently, the footnote to TS Table 3.3-1, "Reactor Protective Instrumentation," gives the explanation for ^{**} as:

^{**}Not applicable above $10^{-4}\%$ RATED THERMAL POWER⁽¹⁾.

Footnote ⁽¹⁾ states:

⁽¹⁾As measured by the Logarithmic Power Channels.

The above explanation will be replaced by:

“Not applicable above a logarithmic power of 10^{-4} % RATED THERMAL POWER.

The footnote is deleted.

1.1.4 Current TS Table 3.3-1, “Reactor Protective Instrumentation (RPI)” Note (a) states:

Trip may be manually bypassed above 10^{-4} % of RATED THERMAL POWER⁽¹⁾; bypass shall be automatically removed when THERMAL POWER⁽¹⁾ is less than or equal to the reset point of the bistable. The reset point shall be within 3.0×10^{-5} % of RATED THERMAL POWER⁽¹⁾ below the bistable setpoint which is nominally 10^{-4} % of RATED THERMAL POWER⁽¹⁾. This accounts for the deadband of the bistable.

Footnote ⁽¹⁾ states:

⁽¹⁾ As measured by the Logarithmic Power Channels.

Entergy proposes to replace TS Table 3.3-1, Note (a) with the following:

The operating bypass may be enabled above the 10^{-4} % bistable setpoint and shall be capable of automatic removal whenever the operating bypass is enabled and logarithmic power is below the 10^{-4} % bistable setpoint. Trip may be manually bypassed during physics testing pursuant to Special Test Exception 3.10.3.

The footnote is deleted.

1.1.5 Current TS Table 3.3-1, “Reactor Protective Instrumentation (RPI)” Note (c) states:

Trip may be manually bypassed below 10^{-4} % of RATED THERMAL POWER⁽¹⁾; bypass shall be automatically removed when THERMAL POWER⁽¹⁾ is greater than or equal to 10^{-4} % of RATED THERMAL POWER⁽¹⁾. During testing pursuant to Special Test Exception 3.10.3, trip may be manually bypassed below 5% of RATED THERMAL POWER; bypass shall be automatically removed when THERMAL POWER is greater than or equal to 5% of RATED THERMAL POWER.

Footnote ⁽¹⁾ states:

⁽¹⁾ As measured by the Logarithmic Power Channels.

Entergy proposes to replace TS Table 3.3-1, Note (c) with the following:

The operating bypass may be enabled below the 10^{-4} % bistable setpoint and shall be capable of automatic removal whenever the operating

bypass is enabled and logarithmic power is above the 10^{-4} % bistable setpoint. During testing pursuant to Special Test Exception 3.10.3, trip may be manually bypassed below 5% of RATED THERMAL POWER; the 10^{-4} % bistable setpoint may be changed to less than or equal to 5% RATED THERMAL POWER to perform the automatic removal function.

The footnote is deleted.

1.1.6 Entergy proposes to add item "7" to TS Table 3.3-1 Action 2 and Table 3.3-1 Action 3.

7.	Logarithmic Power	Logarithmic Power Level – High Local Power Density – High ⁽¹⁾ DNBR – Low ⁽¹⁾ Reactor Coolant Flow – Low ⁽¹⁾
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The new footnote ⁽¹⁾ will state:

⁽¹⁾ With the operating bypass enabled.

2.0 REGULATORY EVALUATION

Section 182a of the Atomic Energy Act of 1954 requires applicants for nuclear power plant operating licenses to include TSs as part of the license. The TSs ensure the operational capability of structures, systems and components that are required to protect the health and safety of the public. The Nuclear Regulatory Commission's (NRC's) regulatory requirements related to the content of the TSs are contained in Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.36, "Technical specifications." That regulation requires that the TSs include items in the following specific categories: (1) safety limits, limiting safety systems settings, and limiting control settings; (2) limiting conditions for operation; (3) surveillance requirements; (4) design features; and (5) administrative controls. However, the regulation does not specify the particular TSs to be included in a plant's license.

The regulations in 10 CFR 50.36(c)(2)(i) state, in part, that,

Limiting conditions for operation are the lowest functional capability or performance levels of equipment required for safe operation of the facility. When a limiting condition for operation of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the technical specifications ...

The regulations in 10 CFR 50.36(c)(3) state that,

Surveillance requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of the systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met.

General Design Criterion (GDC) 10, "Reactor design," in Appendix A to 10 CFR Part 50 states that the reactor core and associated coolant system shall be designed with appropriate margin to assure that specified acceptable fuel design limits are not exceeded during any condition of normal operation, including the effects of anticipated operational occurrences (AOOs).

The NRC's guidance for the format and content of licensee TSs can be found in NUREG-1432, Revision 3.0, "Standard Technical Specifications, Combustion Engineering Plants."

3.0 TECHNICAL EVALUATION

3.1 General

The Reactor Protective System consists of sensors, calculators, logic, and other equipment necessary to monitor selected Nuclear Steam Supply System, containment conditions, and to effect reliable and rapid control element assembly (CEA) insertion (reactor trip) if any or a combination of the monitored conditions approach specified safety system settings. The system's functions are to protect the core and Reactor Coolant System (RCS) pressure boundary for defined AOOs and also to provide assistance in limiting the consequences for certain postulated accidents. Four measurement channels with electrical and physical separation are provided for each parameter used in the direct generation of trip signals, with the exception of CEA position. A two-out-of-four coincidence of like trip signals is required to generate a reactor trip signal. The fourth channel is provided as an installed spare and allows bypassing of one channel while maintaining a two-out-of-three system. Manual reactor trip is also provided.

Some reactor trip signals are provided with operating bypasses that are required to allow reactor startup. The High Logarithmic Power (HLP), High Local Power Density (LPD), Low Departure from Nucleate Boiling Ratio (DNBR), and Low Reactor Coolant System Flow trips are bypassed at prescribed power levels since these trips would generate an unnecessary trip signal during reactor startup and power increase.

3.2 10⁻⁴ percent Operating Bypass

The HLP level trip is provided to trip the reactor when indicated neutron flux power from the excore detectors reaches a preset value. This trip provides protection against inadvertent CEA withdrawals initiated from subcritical conditions (less than 10⁻⁴ percent logarithmic power). The nominal trip set point of this instrumentation is ≤ 0.257 percent of rated thermal power (RTP). The high logarithmic power level operating bypass is provided to allow reactor power to be increased above 0.257 percent power into Mode 1 during a controlled reactor startup. Without the operating bypass in place, a reactor trip is generated when the trip setpoint is reached, thereby preventing further power increases. The operating bypass may be manually inserted above the 10⁻⁴ percent bistable setpoint and is automatically removed when the 10⁻⁴ percent bistable is reset. The automatic bypass removal ensures that the trip will be available in the event of a CEA withdrawal from subcritical conditions.

Additionally, the safety analyses assume that a CEA withdrawal from critical conditions can be initiated from the lowest power level (the most limiting initial condition) at which the HLP trip is

not available. In this case, since the HLP trip is not available, a reactor trip is generated by the Core Protection Calculator (CPC) variable overpower trip function.

The CPC provides reactor trips on DNBR and LPD when core power is above the 10^{-4} percent bistable setpoint. The CPC also generates a reactor trip signal when RCS conditions are outside the range for which CPC is applicable (e.g., all RCPs not running, shutdown CEA banks not fully withdrawn, etc.). The CPC bypass, which bypasses the low DNBR and high LPD trips, is provided to allow reactor trip breakers to be closed in preparation for reactor startup before all of the CPC range checks are met. If these range checks are not met, the CPC generates a reactor trip, thereby preventing CEA withdrawal and reactor startup. Safety analyses credit a CPC trip at the 10^{-4} percent bistable setpoint when conditions do not meet the CPC range checks (e.g., shutdown bank withdrawal). The operating bypass may be manually enabled if power is below 10^{-4} percent bistable setpoint and is automatically removed when the power level increases to the 10^{-4} percent bistable setpoint. This ensures that the CPC is available under conditions where LPD and DNBR are of concern. If conditions do not meet the CPC range limits, as in the case of a CEA shutdown bank not fully withdrawn, a reactor trip signal is immediately generated. When power decreases to the 10^{-4} percent bistable reset value, as after a reactor trip, a permissive signal is generated to allow the operator to bypass the CPCs.

The NRC staff concludes that the reactor protective instrumentation setpoints are consistent with the trip setpoint values and the changes to the 10^{-4} percent operating bypass. In addition, the NRC staff concludes that the changes do not affect the safety function of this instrumentation; therefore, are acceptable.

3.3 TS Table 3.3-1 Actions 2 and 3

TS Table 3.3-1 Actions 2 and 3 are being updated to demonstrate that the logarithmic power channel affects multiple functional units. The logarithmic power channel provides the signal to the 10^{-4} percent bistable for the operating bypass automatic removal function. With the operating bypasses enabled, the accident analyses credit the automatic removal function of the 10^{-4} percent bistable. When the operating bypasses are enabled, the logarithmic power channel affects the HLP, LPD, DNBR, and RCS flow trips. TS Table 3.3-1 Actions 2 and 3 list the channel process measurement circuits which affect multiple functional units while inoperable or in test.

The logarithmic power channel affects multiple functional units and should be included in this list. This change is a human factor enhancement that provides the necessary information to ensure the logarithmic power channel enable and disable setting associated with LPD, DNBR, and RCS flow trips are operable, when required by the plant analyses. The proposed rewording of Actions 2 and 3 is to provide clarity.

With the operating bypass removed, the accident analyses assumptions are met because the LPD, DNBR, and RCS flow trips would be available to perform their intended safety function.

The NRC staff concludes that the changes to TS Table 3.3-1 Actions 2 and 3 do not affect the other functions of the bistable which is to enable the CPC reactor trip. The staff also concludes that the logarithmic power channel affects the functional units stated and should be included in the Action statements.

It is also determined that the proposed changes will not affect the other functions of the bistable which is to enable the CPC reactor trip. In addition, the NRC staff agrees that the logarithmic power channel affects multiple functional units and should be included in TS Table 3.3-1 Actions 2 and 3. The staff concludes that the changes are, therefore, acceptable.

3.4 Summary

The NRC staff evaluated the licensee's proposed changes against the applicable regulatory requirements listed in Section 2.0 of this safety evaluation. Based on its review of the proposed changes to Notes (1) and (5) of TS Table 2.2-1 and Notes (a) and (c) of TS Table 3.3-1, the NRC staff concludes that the changes do not affect the safety function of this instrumentation which is to trip the reactor on a rod withdrawal incident at low reactor power or subcritical conditions. The NRC staff also determined that the proposed changes will not affect the other functions of the bistable which is to enable the CPC reactor trip and the logarithmic power channel affects multiple functional units and should be included in TS Table 3.3-1 Actions 2 and 3. Based on the above, the staff concludes that the proposed changes are acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Louisiana State 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. 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 published in the *Federal Register* on December 15, 2009 (74 FR 66384). 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 amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: Kristy Bucholtz

Date: September 13, 2010

September 13, 2010

Vice President, Operations
Entergy Operations, Inc.
Waterford Steam Electric Station, Unit 3
17265 River Road
Killona, LA 70057-3093

SUBJECT: WATERFORD STEAM ELECTRIC STATION, UNIT 3 - ISSUANCE OF
AMENDMENT RE: REQUEST TO MODIFY TECHNICAL SPECIFICATION
INFORMATION FOR TABLE 2.2-1 AND TABLE 3.3-1 (TAC NO. ME2465)

Dear Sir or Madam:

The Commission has issued the enclosed Amendment No. 228 to Facility Operating License No. NPF-38 for the Waterford Steam Electric Station, Unit 3 (Waterford 3). This amendment consists of changes to the Technical Specifications (TSs) in response to your application dated October 22, 2009.

This TS change clarifies TS Table 2.2-1 Notes (1) and (5), TS Table 3.3-1 Notes (a) and (c), and TS Table 3.3-1 Actions 2 and 3, which have resulted in Plant Protection System (PPS) redundancy issues with respect to verbatim compliance. While Waterford 3 Amendment No. 145, dated September 24, 1998, attempted to clarify TS Table 2.2-1 and Table 3.3-1 and it provided clarification of the logarithmic power use and the bistable reset, the complexity of the TS verbiage has still lead to verbatim compliance issues.

A copy of our related Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,

/RA/

N. Kalyanam, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-382

Enclosures:

1. Amendment No. 228 to NPF-38
2. Safety Evaluation

cc w/encls: Distribution via Listserv

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ADAMS Accession No. ML102100158

*SE memo dated

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