



ENTERGY

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Waterford 3

W3F1-94-0092
A4.05
PR

August 11, 1994

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Subject: Waterford 3 SES
Docket No. 50-382
License No. NPF-38
Technical Specification Change Request NPF-38-155

Gentlemen:

The attached description and safety analysis supports a change to the Waterford 3 Technical Specifications (TS). The requested change would remove cycle-specific variables from the TS and control them under a new document called the Core Operating Limits Report (COLR). All cycle-specific limits that are to be included in the COLR must be calculated using NRC approved methodologies. Subsequent changes to these limits may be performed pursuant to 10CFR 50.59 rather than the current license amendment process. Thus, removing cycle-specific limits from the TS will reduce licensee and NRC burden associated with the review and processing of these types of changes.

The proposed change is consistent with the technical specification line-item improvement guidelines provided by the NRC in Generic Letter (GL) 88-16, "Removal of Cycle-Specific Parameter Limits From Technical Specifications," dated October 3, 1988. However, the proposed change does in part, deviate from the generic guidance provided in the revised Combustion Engineering Standard Technical Specifications (STS) NUREG 1432. NUREG 1432 forms the bases for GL 88-16, and requires a listing of the NRC approved methodologies in the Administrative Controls section of the TS. This proposed change, as discussed herein, takes exception to the above stated requirement.

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Waterford 3 is currently in Fuel Cycle 7 and would prefer to implement this proposed change prior to completing reload analysis in support of Fuel Cycle 8. Therefore, we respectfully request that this proposed amendment be approved by approximately February 1, 1995.

Should you have any questions or comments concerning this request, please contact Paul Caropino at (504)739-6692.

Very truly yours,



R.P. Barkhurst

Vice President, Operations

Waterford 3

RPB/PLC/ssf

Attachment: Affidavit
NPF-38-155

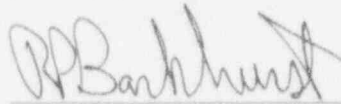
cc: L.J. Callan, NRC Region IV
D.L. Wigginton, NRC-NRR
R.B. McGehee
N.S. Reynolds
NRC Resident Inspectors Office
Administrator Radiation Protection Division
(State of Louisiana)
American Nuclear Insurers

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the matter of)
)
Entergy Operations, Incorporated) Docket No. 50-382
Waterford 3 Steam Electric Station)

AFFIDAVIT

R.P. Barkhurst, being duly sworn, hereby deposes and says that he is Vice President Operations - Waterford 3 of Entergy Operations, Incorporated; that he is duly authorized to sign and file with the Nuclear Regulatory Commission the attached Technical Specification Change Request NPF-38-155; that he is familiar with the content thereof; and that the matters set forth therein are true and correct to the best of his knowledge, information and belief.



R.P. Barkhurst
Vice President Operations - Waterford 3

STATE OF LOUISIANA)
) ss
PARISH OF ST. CHARLES)

Subscribed and sworn to before me, a Notary Public in and for the Parish and State above named this 11TH day of AUGUST, 1994.



Notary Public

My Commission expires WITH LIFE.

DESCRIPTION AND SAFETY ANALYSIS
OF PROPOSED CHANGE NPF-38-155

The proposed change would modify the Technical Specifications (TS) having cycle-specific parameter limits by replacing the values of those limits with a reference to a Core Operating Limits Report (COLR) that would contain the values of those limits. The proposed change also includes the addition of the COLR to the Definitions section and the Administrative Controls section (reporting requirements) of the TS. The proposed change follows the guidance developed by the NRC and provided to all power reactor licensees by Generic Letter 88-16, dated October 3, 1988.

Existing Specification

See Attachment A

Proposed Specification

See Attachment B

Waterford 3 COLR

See Attachment C

Description

The proposed change involves relocating several parameters from their respective Technical Specification to the Core Operating Limits Report (COLR). The revised Technical Specifications will reference the COLR for these parameters. The parameters removed from the Technical Specifications and included in Revision 0 of the COLR have not been altered. The Technical Specification changes proposed by this license amendment request are briefly described below.

INDEX

The Index is modified by adding reference to the COLR and indicating deletion of the Figures and Tables that are relocated to the COLR.

DEFINITIONS

Item 1.9a is added to the Definition section to define the Core Operating Limits Report -- COLR.

LCOs ACTIONS & SURVEILLANCE REQUIREMENTS

- 3.1.1.1 Shutdown Margin -- Any Full Length CEA Withdrawn:
Changed LCO to delete the shutdown margin limits and add reference to the COLR. Changed SURVEILLANCE REQUIREMENT 4.1.1.1.1 to reference the COLR.
- 3.1.1.2 Shutdown Margin -- All Full Length CEA Fully Inserted:
Delete Figure 3.1-10. Changed LCO, ACTION, and SURVEILLANCE REQUIREMENT by deleting reference to Figure 3.1-0 and adding reference to the COLR.
- 3.1.1.3 Moderator Temperature Coefficient (MTC):
LCO 3.1.1.3 is modified by requiring MTC limits to be within the limits specified in the COLR. Items 3.1.1.3.a and 3.1.1.3.b are retained as maximum upper design limits. Therefore, the limit specified in 3.1.1.3.c is relocated to the COLR.
- 3.1.2.9 Boron Dilution:
Delete Tables 3.1-1 through 3.1-5. Changed LCO b.2 and ACTION b & c to delete reference to Tables 3.1-1 through 3.1-5 and add reference to the COLR. Delete alarm setpoint adjustment frequencies in SURVEILLANCE REQUIREMENT 4.1.2.9.5 and add reference to the COLR.
- 3.1.3.1 Movable Control Assemblies -- CEA Position:
Delete Figure 3.1-1A. Changed ACTIONS c & d to delete reference to Figure 3.1-1A & Figure 3.1-2 and add reference to the COLR.
- 3.1.3.6 Regulation CEA Insertion Limits:
Delete Figure 3.1-2. Changed LCO, ACTIONS a.2, b.1, and footnote specified by ** to delete reference to Figure 3.1-2, add reference to the COLR.
- 3.1.3.7 Part Length CEA Insertion Limits:
Delete Figure 3.1-3. Changed LCO and ACTION a.2 to delete reference to Figure 3.1-3, add reference to the COLR.

- 3.2.1 Linear Heat Rate:
Delete Figures 3.2-1 and 3.2-1a. Changed LCO, ACTION b and SURVEILLANCE REQUIREMENT 4.2.1.2 to delete reference to Figures 3.2-1 or 3.2-1a, add reference to the COLR.
- 3.2.3 Azimuthal Power Tilt:
Changed to replace the 3% Azimuthal Power Tilt limit in the LCO and ACTION b with reference to the COLR.
- 3.2.4 Departure From Nucleate Boiling Ratio (DNBR) Margin:
Delete Figures 3.2-2 and 3.2-3. Changed LCO items c & d, ACTION b, and SURVEILLANCE REQUIREMENT 4.2.4.2 to delete reference to Figures 3.2-2 and 3.2-3, add reference to the COLR.
- 3.2.7 Axial Shape Index:
Changed to delete reference to the specific Axial Shape Index limits and add reference to the COLR.
- 3.9.1 Boron Concentration:
Changed to replace the reference to specific K_{eff} and boron concentration limits and add reference to the COLR.

BASES

Bases sections 3/4.1.2.9, 3/4.2.1, 3/4.2.3, 3/4.2.4, and 3/4.9.1 are changed to remove reference to deleted Tables and or add reference to the COLR as appropriate.

ADMINISTRATIVE CONTROLS

Section 6.9.1.11 was added to include the COLR under the reporting requirements of the Administrative Control section of the TS. The proposed specification requires that all changes in cycle-specific parameter limits be documented in the COLR before each reload cycle or remaining part of a reload cycle. The proposed specification requires that the COLR be submitted, upon issuance to the NRC Document Control Desk with Copies to the Regional Administrator and Resident Inspector. The report provides the values of the cycle-specific parameter limits that are applicable for the current fuel cycle. The proposed specification requires that NRC approved methodologies be used in establishing the values of these limits for the relevant specifications and that the values be consistent with all applicable limits of the safety analysis.

Proposed TS 6.9.1.11 deviates from the guidance provided in the revised Combustion Engineering Standard Technical Specifications (NUREG 1432) which requires that the NRC approved methodologies be listed in the TS Administrative Controls section. As stated above, the proposed TS requires the use of NRC approved methodologies. These methodologies are identified and listed in the COLR. Waterford 3 feels that listing the methodologies in the TS is inconsistent with the overall intent of the proposed change. If methodologies are listed in the TS and the NRC approves a new methodology, the licensee may use the new approved method, however, must submit a license amendment (purely an administrative change) to update the TS list. This scenario is counterproductive to the intent of the proposed change (i.e., to reduce administrative burden), and would not provide for any increase in safety or control above the proposed requirement to use NRC approved methodologies.

Purpose of The Technical Specifications

The following discussions provide the purpose of the Technical Specifications impacted by the proposed change:

3.1.1.1 and 3.1.1.2 Shutdown Margin Requirements

These specifications ensure that the reactor remains subcritical following design basis accidents or anticipated operational occurrences. The shutdown margin could change from cycle to cycle as a result of reload fuel management. The requirements related to shutdown margin are evaluated each cycle as part of the reload analyses.

3.1.1.3 Moderator Temperature Coefficient

The MTC limits are a function of the core reload design as well as core burnup. The reload analyses performed each cycle ensures that the MTC is bounded by the safety analysis assumptions.

3.1.2.9 Boron Dilution

This specification is provided to protect against a boron dilution event and to prevent a complete loss of shutdown margin should an inadvertent boron dilution event occur. The time to total loss of shutdown margin due to an inadvertent boron dilution event is evaluated for each reload cycle. The time to criticality and configuration restrictions in the TS are impacted by critical boron concentration, initial boron concentration and inverse boron worth, which are cycle dependent parameters.

3.1.3.1 Movable Control Assemblies - CEA Position

The cycle-specific safety analyses include the evaluation of CEA misoperation events to ensure that adequate margin is provided in the event of a CEA misalignment. Cycle-specific core physics parameters are input to the safety analyses to derive the acceptable limit specified by Technical Specification Figure 3.1-1A.

3.1.3.6 and 3.1.3.7 Regulating and Part Length CEA Insertion Limits

The Power Dependent Insertion Limits (PDIL) provided by Technical Specifications 3.1.3.6 and 3.1.3.7 ensure that the core is operated within the initial condition assumptions used in the safety analyses. The limits can change from cycle to cycle to ensure that the results of safety analyses are acceptable. The CEA positions are used to determine the range of CEA-related physics parameters to be used in the safety analyses.

3.2.1 Linear Heat Rate

The linear heat rate limit provided by this specification ensures that the peak fuel cladding temperature will not exceed 2200°F in the event of a loss of coolant accident (LOCA). The LOCA analyses are dependent on this and other limits that are specified in the core reload design.

3.2.3 Azimuthal Power Tilt

The cycle-specific reload analyses include allowances for the maximum amount of azimuthal power tilt. The analyses performed each cycle include appropriate allowances for the maximum tilt in conjunction with other core physics related parameters. The maximum tilt limit specified in Technical Specifications 3.2.3 may change to ensure that the results of the safety analyses are acceptable.

3.2.4 DNBR Margin

The DNBR margin related limits given in Technical Specifications Figures 3.2-2 and 3.2-3 are determined each cycle for the core protection calculators (CPCs) and/or the Core Operating Limit Supervisory System (COLSS) in a degraded condition (COLSS out of service and/or CEA Calculators inoperable). The limits given by these figures are dependent on the cycle-specific margin requirements for the given conditions. The margin requirements are affected by the reload core design. These margins ensure acceptable minimum DNBR throughout all anticipated operational occurrences.

3.2.7 Axial Shape Index

The ASI range limits provided by this Technical Specifications ensure that the actual value of the core average ASI is maintained within the range of values used in the safety analyses. The limits include the uncertainties associated with the CPC and COLSS calculations of the actual ASI. These uncertainties are affected by the core reload design and are evaluated as part of the reload analyses.

3.9.1 Boron Concentration

This specification ensures that during refueling (1) the reactor will remain subcritical during core alterations, and (2) a uniform boron concentration is maintained for reactivity control in the RCS. These limitations are consistent with the initial conditions assumed for the boron dilution event in the safety analyses.

Safety Analysis

The proposed change described above shall be deemed to involve a significant hazards consideration if there is a positive finding in any of the following areas:

1. Will the operation of the facility in accordance with these proposed changes involve a significant increase in the probability or consequence of any accident previously evaluated?

Response: No

Removing cycle-specific variables from the TS and placing them into a COLR, is consistent with the NRC guidance provided in GL 88-16. These changes are administrative in nature and have no impact on plant operation or accident analyses. The TS will continue to require operation within the core operational limits for each cycle reload calculated by the approved reload methodologies. If these limits are violated, Technical Specifications will continue to ensure that the appropriate actions are taken.

The cycle-specific evaluation demonstrates that changes in the fuel cycle design and the corresponding COLR do not involve a significant increase in the probability or consequences of an accident previously evaluated.

Listing the NRC approved methodologies in the COLR as opposed to the TS Administrative Controls section is purely an administrative change in contrast to NUREG 1432. The proposed change requires the use of NRC approved methodologies. Listing the approved methodologies in the TS provides the potential for an increased licensee and NRC administrative burden without a commensurate increase in safety or control.

Therefore, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Will the operation of the facility in accordance with these proposed changes create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No

The proposed changes, to relocate the cycle-specific variables from TS to the COLR, are administrative in nature. No change in the design, configuration, or method of operation of the plant is made by this amendment. The cycle-specific variables will continue to be calculated using NRC approved methods. TS will continue to require operation within the required core operating limits and appropriate actions will be taken if the limits are exceeded.

Listing the NRC approved methodologies in the COLR as opposed to the TS Administrative Controls section is purely an administrative change in contrast to NUREG 1432. The proposed change requires the use of NRC approved methodologies. Listing the approved methodologies in the TS provides the potential for an increased licensee and NRC administrative burden without a commensurate increase in safety or control.

Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Will the operation of the facility in accordance with these proposed changes involve a significant reduction in the margin of safety?

Response: No

The margin of safety presently provided is not affected by removing cycle-specific core operating limits from TS. The core limits contained in the COLR are obtained through analyses using NRC approved methodologies. The TS still: (1) require that the core be operated

within these limits and (2) specify appropriate actions to be taken if the limits are violated. The cycle-specific COLR limits for future reloads will also be developed based on NRC-approved methodologies. In addition, each reload will involve a 10CFR 50.59 safety review to assure that operation of the unit within the cycle-specific limits will not involve a reduction in a margin of safety.

Therefore, the proposed changes do not involve a significant reduction in a margin of safety.

Safety and Significant Hazard Determination

Based on the above safety analysis, it is concluded that: (1) the proposed change does not constitute a significant hazards consideration as defined by 10CFR50.92; and (2) there is a reasonable assurance that the health and safety of the public will not be endangered by the proposed change; and (3) this action will not result in a condition which significantly alters the impact of the station on the environment as described in the NRC Final Environmental Statement.

NPF-38-155

ATTACHMENT A