

May 9, 2005

Mr. Joseph E. Venable
Vice President Operations
Entergy Operations, Inc.
17265 River Road
Killona, LA 70066-0751

SUBJECT: WATERFORD STEAM ELECTRIC STATION, UNIT 3 - ISSUANCE OF AMENDMENT RE: MODIFICATION OF TECHNICAL SPECIFICATION (TS) 5.3.1, FUEL ASSEMBLIES, T.S. 5.6.1, CRITICALITY, T.S. 6.9.1.11.1, CORE OPERATING LIMITS REPORTS, AND DELETION OF TS INDEX (TAC NO. MC3584)

Dear Mr. Venable:

The Commission has issued the enclosed Amendment No. **200** 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 June 17, 2004, as supplemented by letters dated October 18, 2004, February 2, February 21, March 8, and April 5, 2005.

The amendment revises TS 5.3.1 to allow the use of a limited number of lead test assemblies (LTAs), the use of ZIRLO™ as an acceptable fuel cladding, and to allow a limited substitution of zirconium alloy or stainless steel filler rods for fuel rods, while relocating the maximum fuel enrichment from TS 5.3.1 to TS 5.6.1. TS 6.9.1.11.1 is revised to allow the use of the Westinghouse Nuclear Physics code package and to incorporate the methodology used to support ZIRLO™ cladding material. Additionally, the amendment approves the administrative changes of correcting a referencing report error of the "CESEC" code and deleting the TS Index from the TSs.

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, Section 1
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-382

Enclosures: 1. Amendment No. **200** to NPF-38
2. Safety Evaluation

cc w/encls: See next page

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ENERGY OPERATIONS, INC.

DOCKET NO. 50-382

WATERFORD STEAM ELECTRIC STATION, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 200
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 June 17, 2004, as supplemented by letters dated October 18, 2004, February 2, February 21, March 8, and April 5, 2005, 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-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. 200, 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 60 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Allen G. Howe, Chief, Section 1
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: May 9, 2005

ATTACHMENT TO LICENSE AMENDMENT NO. 200

TO FACILITY OPERATING LICENSE NO. NPF-38

DOCKET NO. 50-382

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

I - XXIII

5-5

5-6

6-20a

Insert

5-5

5-6

6-20a

6-20b

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 200 TO

FACILITY OPERATING LICENSE NO. NPF-38

ENERGY OPERATIONS, INC.

WATERFORD STEAM ELECTRIC STATION, UNIT 3

DOCKET NO. 50-382

1.0 INTRODUCTION

By application dated June 17, 2004 (Ref. 1), as supplemented by letters dated October 18, 2004 (Ref. 2), February 2 (Ref. 3), February 21 (Ref. 4), March 8 (Ref. 5), and April 5, 2005 (Ref. 6), Entergy Operations, Inc. (the licensee or Entergy), requested changes to the Technical Specifications (TSs) for Waterford Steam Electric Station, Unit 3 (Waterford 3). References 2, 3, 4, 5, and 6 provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the U.S. Nuclear Regulator Commission (NRC) staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on July 20, 2004 (69 FR 43460).

The proposed changes would revise Waterford 3 TS 5.3.1 to include ZIRLO™ as an acceptable fuel rod cladding; allow deployment of a limited number of lead test assemblies (LTAs) in the non-limiting core regions and limited substitutions of zirconium alloy or stainless steel filler rods for fuel rods; and relocate the maximum fuel enrichment limit of 5 percent to TS 5.6.1. The license amendment request (LAR) would also amend TS 6.9.1.11.1 by (1) adding analytical methods referenced to allow the use of Westinghouse Nuclear Physics code package and to support the use of ZIRLO™ fuel cladding; and (2) revise a topical report (TR) number (Ref. 7).

Additionally, the licensee requested the deletion of the Index from the TSs. This request required a separate review since the nature of the change is administrative. However, the regulatory basis and justification for the change was not identified in the original LAR and the NRC staff requested clarifying information from the licensee during a telephone conference call on March 3, 2005. The licensee responded to the NRC staff's comments with a letter, including supplemental information to the initial request, dated March 8, 2005. The supplemental information clarified the deletion of the TS Index as the deletion of the TS Index pages from future LARs that include TS changes. The licensee committed to continue to maintain and control the TS Index through a document control program similar to the NRC-approved TS Bases Control program used by the licensee.

Although the NRC staff initially agreed that the request was administrative and did not require a technical analysis, the NRC staff had concerns regarding how the subsequent changes by the licensee to the TS Index would remain consistent in the TS copies that are used by associated

parties, including the NRC. The licensee agreed during a telephone conference call on March 24, 2005, to provide a description of the current document control process that would incorporate the TS Index revisions as part of this process. The licensee submitted the description by letter dated April 5, 2005. The NRC staff compiled the supplemental information from the licensee and evaluated the request under the current regulatory requirements for TS contents.

2.0 REGULATORY EVALUATION

Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.36(c)(2)(ii) requires that TS limiting conditions for operation (LCOs) be established for process variables, design features, and operating restrictions for which a value is assumed as an initial condition of a design-basis accident in the licensee's safety analyses. As such, LARs are generally required for each fuel cycle to update the values of cycle-specific parameter limits in TSs. To eliminate the need for an LAR to update the cycle-specific parameter limits for each fuel cycle while meeting 10 CFR 50.36(c)(2)(ii) requirements, the NRC staff has allowed licensees to use an alternative to incorporate the cycle-specific parameter limits in the core operating limits report (COLR). Generic Letter (GL) 88-16, "Removal of Cycle-Specific Parameter Limits from Technical Specifications," provides the COLR implementation guidance. The guidance includes the requirement to list the NRC-approved analytical methods used to determine the core operating limits in the TSs. To further avoid the need for TS changes every time a revision to an approved TR is approved by the NRC staff, the NRC staff also approved TS Task Force (TSTF) Traveler TSTF-363, "Revise Topical Report Reference in ITS 5.6.5, COLR," which allows for listing TRs in the TS only by report numbers and titles, with a detailed identification of the revisions and supplement numbers and approval dates specified in the COLR. The NRC staff had approved the licensee's implementation of TSTF-363 in the current Waterford 3 TS.

In addition, 10 CFR 50.36(c)(4) requires the inclusion, in the TS, of the facility design features such as materials of construction and geometric arrangements, which, if altered or modified, would have a significant effect on safety.

The NRC staff evaluation of the proposed change on TS 5.3.1 regarding fuel assemblies ensures continued compliance with the 10 CFR 50.36(c)(4) requirement. The evaluation of the proposed change to TS 6.9.1.11.1 ensures continued compliance with the guidance of GL 88-16 and TSTF-363 and proper application of the approved methodologies within the conditions and limitations imposed on the methodologies.

In regards to the TS Index deletion, 10 CFR 50.36(a) states:

Each applicant for a license authorizing operation of a production or utilization facility shall include in his application proposed technical specifications in accordance with the requirements of this section. A summary statement of the bases or reasons for such specifications, other than those covering administrative controls, shall also be included in the application, but shall not become part of the technical specifications.

The TS index is not formally listed as being part of the TSs. However, past submittals by the licensee have included the TS Index pages to supplement the TS changes. The NRC staff agrees that the TS Index is similar to the TS Bases, in that they provide information about the

TSs, but need not be considered to be part of the TSs. Also, the NRC staff reviewed the remainder of 10 CFR 50.36 for any potential safety impacts due to the removal of the TS Index from all subsequent LARs and found no adverse safety issues with the removal of the TS Index.

3.0 TECHNICAL EVALUATION

In its application dated June 17, 2004, the licensee proposed to (1) revise TS 5.3.1 to allow for the use of ZIRLO™ material for the fuel cladding and allow the use of LTAs in non-limiting core regions; (2) add the several NRC-approved TRs to TS 6.9.1.11.1 to allow the use of Westinghouse Nuclear Physics code package and the use of ZIRLO™ cladding; and (3) delete the TSs Index from the TS. In its supplemental letter dated February 2, 2005, the licensee also requested to remove the Phrase “CENPD-107” from the title of the analytical method referenced in Item 6 of TS 6.9.1.11.1. The NRC staff evaluation of these changes is addressed in the following sections.

3.1 Revision to TS 5.3.1, FUEL ASSEMBLIES

The licensee proposed to replace TS 5.3.1, FUEL ASSEMBLIES, in its entirety, with the following:

The reactor shall contain 217 fuel assemblies. Each assembly shall consist of a matrix of Zircaloy-4 or ZIRLO fuel rods with an initial composition of natural or slightly enriched uranium dioxide (UO₂) as fuel material. Limited substitutions of zirconium alloy or stainless steel filler rods for fuel rods, in accordance with approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC staff approved codes and methods and shown by tests or analyses to comply with all fuel safety design bases. A limited number of lead test assemblies that have not completed representative testing may be placed in non-limiting core regions.

This revised TS 5.3.1 is consistent with TS 4.2.1 in NUREG-1432, “Standard Technical Specifications Combustion Engineering Plants,” which includes ZIRLO™ as an optional fuel cladding material, allows the use of limited substitutions of zirconium alloy or stainless steel filler rods for fuel rods, and allows the use of LTAs in non-limiting core regions.

The revised TS removes many specific numbers of the fuel assembly design features from the existing TS: active fuel length of 150 inches; a maximum of 236 fuel rods for each fuel assembly; nominal value of 1830 grams of uranium for each fuel rod; maximum initial core loading enrichment of 2.91 weight percent U-235; and maximum enrichment limit of 5.0 weight percent U-235.

The removal of active fuel length, the fuel rod uranium nominal value, and number of fuel rods per assembly is acceptable. This is because the revised TS 5.3.1 specifies that fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC-approved codes and methods and shown by tests or analyses to comply with all fuel safety design bases. This revised wording is consistent with NUREG-1432 in using the site specific number of fuel assemblies and fuel rods in each fuel assembly.

The active fuel length of 150 inches and the maximum number of 236 fuel rods per fuel assembly (i.e., 51212 rods for 217 fuel assemblies) are reflected in Table 4.2-1 in Waterford 3 Final Safety Analysis Report (FSAR). The licensee stated that the nominal value of 1830 grams of uranium for each fuel rod will be added to the Waterford 3 FSAR. The fuel design features described in FSAR Table 4.2-1 have been adequately analyzed to meet all fuel design bases. In addition, information contained in the FSAR is adequately controlled under the review process of 10 CFR 50.59, "Changes, Tests, and Experiments."

The removal of the maximum initial core loading enrichment limit of 2.91 weight percent is acceptable because the initial limit on first fuel cycle is no longer applicable to the subsequent cycles. Also, the removal of the maximum enrichment of 5.0 weight percent U-235 from TS 5.3.1 is acceptable because this enrichment limitation is relocated to TS 5.6.1, Spent Fuel Racks. The LAR would add Item h in TS 5.6.1, which reads:

- h. Fuel assemblies having a maximum U-235 enrichment of 5.0 weight percent.

This change is consistent with NUREG-1432 in format without the loss of content.

The revised TS 5.3.1 allows for the use of ZIRLO™ fuel cladding. ZIRLO™ is a zirconium-based fuel rod cladding material developed by Westinghouse, and has been approved by the NRC for use in the Westinghouse fuel designs. The use of ZIRLO™ clad fuel rods will substantially reduce exterior corrosion and particularly the spalling experienced by some current Zircaloy-4 clad fuel rods as they approach higher burnup levels and duty cycles. CENPD-404-P-A, "Implementation of ZIRLO™ Cladding Material in CE Nuclear Power Fuel assembly Designs," provided justification for the use of ZIRLO™ in the Combustion Engineering (CE) Nuclear Power (CENP) fuel assemblies. As discussed in Section 3.2 of this report, the use of ZIRLO™ in Waterford 3 is acceptable.

The revised TS 5.3.1 allows the use of limited substitutions of Zirconium alloy or stainless steel filler rods for fuel rods, in accordance with approved applications of fuel rod configurations. This is acceptable since the revised TS also specifies that fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC approved codes and methods and shown by tests or analyses to comply with all fuel safety design bases.

The revised TS 5.3.1 allows the use of a limited number of LTAs, which have not completed representative testing, in non-limiting core regions. The licensee, in the List of Regulatory Commitments in Section 4 of this report, provides a commitment that prior to the use of LTAs, fuel designs will be analyzed with applicable NRC-approved codes and methods and shown by tests or analyses to comply with all fuel safety design bases and to assure no new or different kind of accident from any accident previously evaluated will be created. Therefore, the revised TS to allow for use of LTAs is acceptable.

In summary, the licensee proposed revision of TS 5.3.1 is acceptable and continues to meet the requirement of 10 CFR 50.36(c)(4).

3.2 Revision to TS 6.9.1.11.1, Core Operating Limits Report

The licensee proposed to supplement the list of the approved analytical methods referenced in TS 6.9.1.11.1 with the following TRs⁽¹⁾:

- (11) "Implementation of ZIRLO Material Cladding in CE Nuclear Power Fuel Assembly Designs," CENPD-404-P-A (Methodology for Specification 3.1.1.3 for MTC, 3.2.1 for Linear Heat Rate, 3.2.3 for Azimuthal Power Tilt, and 3.2.7 for ASI).
- (12) "Qualification of the PHOENIX-P/ANC Nuclear Design System For Pressurized Water Reactor Cores," WCAP-11596-P-A; "ANC: A Westinghouse Advanced Nodal Computer Code," WCAP-10965-P-A; and "ANC: A Westinghouse Advanced Nodal Computer Code: Enhancements to ANC Rod Power Recovery," WCAP-10965-P-A Addendum 1. (Methodology for Specifications 3.1.1.1 and 3.1.1.2 for Shutdown Margins, 3.1.1.3 for MTC, 3.1.3.6 for Regulating and group P CEA Insertion Limits, 3.1.2.9 Boron Dilution (Calculation of CBC & IBW), and 3.9.1 Boron Concentration).
- (13) "Qualification of the Two-Dimensional Transport Code PARAGON," WCAP-16045-P-A (Methodology for Specifications 3.1.1.1 and 3.1.1.2 for Shutdown Margins, 3.1.1.3 for MTC, 3.1.3.6 for Regulating and group P CEA Insertion Limits, 3.1.2.9 Boron Dilution (Calculation of CBC & IBW), and 3.9.1 Boron Concentration).

The referencing of these approved TRs follows the same practice in the current TSs using the TSTF-363 guidance, and is acceptable. The acceptability of the application of these TRs to Waterford 3 is discussed below.

3.2.1 Westinghouse Nuclear Physics Codes

The PHOENIX-P and ANC codes are traditional Westinghouse neutronics methods which have been approved by the NRC. ANC is a three-dimensional two-group diffusion theory nodal code used for nuclear design analyses for determining the core design parameters, such as the critical boron concentration, control rod worths, reactivity coefficients, assembly average powers and exposures, assembly peak rod powers, peaking factors, and axial power shapes. WCAP-10965-P-A and Addendum 1 describe the ANC code and enhancements to the neutronic solution. PHOENIX-P is a two-dimensional, multi-group transport theory code traditionally used to calculate lattice physics parameters and provide nuclear input data to the ANC code. TR WCAP-11596-P-A describes the PHOENIX-P/ANC nuclear design system for the pressurized water reactor (PWR) cores, and provides demonstration of the qualification of the PHOENIX-P/ANC nuclear analysis package. The qualification process covers an acceptable range of comparisons between the PHOENIX-P/ANC calculations and the operating reactor data measured during startup tests and during normal power operations from several representative reactor cycles from three-loop and four-loop Westinghouse-designed plants.

(1) In Reference 1, the markups of the TS pages show the TR numbers for these TRs as 9, 10, and 11. However, when the extended power uprate amendment was issued on April 15, 2005, the TR numbers 9 and 10 were taken by 2 TRs inserted by that amendment. Therefore, the next three numbers, namely 11, 12, and 13, are used.

The NRC staff has reviewed and concluded the PHOENIX-P/ANC nuclear analysis system to be acceptable for use in the PWR design analysis.

To justify the application of Westinghouse Nuclear Physics code package to Waterford 3, which is a CE-designed plant, the licensee provided supplemental information to demonstrate its applicability to Waterford 3 in Enclosure 1 to its June 17, 2004, LAR. This includes the comparisons between the predictions of the PHOENIX-P and ANC Nuclear Physics codes and the Waterford 3 Cycles 11 and 12 zero power physics test measurements and at-power operating data. The zero power physics tests includes critical boron concentrations, moderator temperature coefficient, control rod worth, and differential boron worth. The power operation data include boron letdown curves and axial power distributions. In all of the comparisons, the differences between the measured and predicted values are very small, except for only a few low-power fuel assemblies on the core periphery having relatively higher percentage differences. The maximum error for the potential limiting fuel assemblies is within the uncertainty allowance on the assembly power used in the safety analysis. Therefore, the NRC staff concludes that the PHOENIX-P/ANC Nuclear Physics code package is acceptable for the Waterford 3 LAR, and the listing of these TRs in TS 6.9.1.11.1 is acceptable.

PARAGON is a new neutron transport code that can be used with a nuclear design code system or as a stand-alone code, which can be used as a direct replacement for the PHOENIX-P code. TR WCAP-16045-P-A describes the PARAGON code and confirms the qualification of the code both as a stand-alone transport code and as a substitute for the PHOENIX-P code as a nuclear data source for input to a nodal code. The qualification process includes a comparison of PARAGON predicted values to measured data from several plants. Benchmarking has shown that the PARAGON/ANC package results are essentially the same as the result obtained from the PHOENIX-P/ANC package. The NRC has previously reviewed and concluded the WCAP-16045-P-A to be acceptable for LARs with the safety evaluation stating that “the staff considers the new PARAGON code to be well qualified as a stand alone code replacement for the PHOENIX-P lattice code, wherever the PHOENIX-P code is used in NRC-approved methodologies.” Therefore, the NRC staff concludes that it is acceptable for the Waterford 3 LAR, and the addition of WCAP-16045-P-A to TS 6.9.1.11.1 as a replacement of the PHOENIX code in the Westinghouse Nuclear Physics code package is also acceptable.

3.2.2 CENPD-404-P-A

CENPD-404-P-A, “Implementation of ZIRLO™ Cladding Material in CE Nuclear Power Fuel Assembly Designs,” provided justification for the use of ZIRLO™ in the CENP fuel assemblies. The NRC staff has approved CENPD-404 for the use of ZIRLO™ as cladding material for CENP-designed plants subject to five conditions. In Attachment 1 to its June 17, 2004, LAR, the licensee responded to the five conditions. In Attachment 3 to its June 17, 2004, LAR, the licensee provided its commitments to abide by these conditions. These commitments are acceptable except for that related to Condition 4.

Condition 4 states that “until data is available demonstrating the performance of ZIRLO™ cladding in CENP designed plants, the fuel duty will be limited for each CENP designed plant with some provision for adequate margin to account for variations in core design (e.g., cycle length, plant operating conditions, etc.). Details of this condition will be addressed on a plant-specific basis during the approval to use ZIRLO™ in a specific plant.” The licensee proposed to impose 110 to 120 percent of the modified fuel duty index (mFDI) value of 590 as a restriction

of the upper fuel duty limit for the CE fuel assemblies, until adequate fuel performance of ZIRLO™ cladding is demonstrated. In its response dated October 18, 2004, the licensee explained that the maximum mFDI value of about 600, as constrained by operating experience, was determined to be applicable for the 16x16 CE fuel design as approved by the NRC for Palo Verde Nuclear Generating Station Units 1, 2, and 3, which are the lead 16x16 CE fuel design plants for ZIRLO™ implementation (Ref. 8).

In response to a NRC staff request during a telephone conference call on December 6, 2004, the licensee reduced the mFDI limit from 590 to 570 in its response dated February 2, 2005. The licensee described that the basis for this Waterford 3 specific mFDI of 570 is to allow the ZIRLO™ cladding to operate within the current cladding operating limits of less than 100 microns best estimate maximum oxide thickness and no more than minor spallation. The calculation to derive the mFDI limit was based on actual Waterford 3 fuel management from a selected set of cycles having relatively adverse corrosion performance. The calculation also conservatively assumed slightly higher local power peaking and reactor coolant temperature, both of which accelerate fuel cladding corrosion. Therefore, the NRC staff concludes the calculated mFDI limit of 570 to be acceptable.

The licensee also provided a commitment that the upper design limits for Waterford 3 will be limited to mFDI values of 627 for the majority of the fuel assemblies, and 684 for a fraction of the fuel pins in a limited number of assemblies (no more than eight fuel assemblies). These upper limit mFDI values, which are 110 percent and 120 percent of 570, respectively, are consistent with the NRC approval for the lead ZIRLO™ cladding for a CE-designed plant and include the same mFDI deviations to provide adequate margin to account for variations in core design. The licensee further committed that Entergy will not lift the ZIRLO™ mFDI restriction without either NRC approval of a supplement to CENPD-404-P-A that includes corrosion data from two CE plants (not at the same plant site) or NRC approval of Waterford 3 site specific corrosion data. The NRC staff finds that the licensee's commitments set forth in its letter dated October 18, 2004, related to Condition 4 regarding the upper limits of mFDI values for the ZIRLO™ cladding restriction and the removal the mFDI restriction are acceptable.

The NRC staff finds that Waterford 3's implementation of ZIRLO™ cladding in the CE fuel assembly designs as described in CENPD-404-P-A is acceptable. Therefore, the addition of CENPD-404-P-A to the Waterford 3 TS 6.9.1.11.1 is acceptable.

3.3 Revision of CESEC III Referencing Report

TS 6.9.1.11.1, Item 6, lists the approved analytical method as "CESEC - Digital Simulation for a Combustion Engineering Nuclear Steam Supply System,' CENPD-107." In its letter dated February 21, 2005, the licensee proposed to replace the TR number "CENPD-107" with "(CE Letter LD-82-001 and NRC SE to CE dated April 3, 1984)." This proposed change is to correct an error in the referencing of the CESEC code.

CENPD-107 is the TR for the earlier version of CESEC, such as CESEC I and CESEC II, which the NRC staff found to contain deficiencies for the analysis of the design-basis transients and accidents. In 1982, CE submitted the latest version of CESEC, referred to as CESEC III, for NRC staff review. However, even though the same report title was used, CESEC III was not submitted as a revision or supplement of CENPD-107. Rather, it was submitted in Enclosure 1-P to CE letter LD-82-001, dated January 6, 1982, and was submitted on the dockets of a few

CE-designed plants, including Waterford 3. The NRC-approved CESEC III for licensing application for the CE plants on whose docket CESEC III was submitted by letter dated April 3, 1984 (Ref. 9). Since CESEC III is different from the earlier version of CESEC described in CENPD-107, and there was no generic TR number for CESEC III; CE letter LD-82-001 is generally referenced when CESEC III is used for a LAR.

The licensee stated that in its request for the TS change to include the approved method CESEC III in the Waterford 3 TS (in letter dated August 11, 1994 and supplemented on December 2, 1994), the licensee inappropriately included "CENPD-107" as the TR number for CESEC III. The proposed change from "CENPD-107" to "CE letter LD-82-001 and NRC SE to CE dated April 3, 1984" is merely to correct this mistake by using the proper referencing information for CESEC III. The NRC staff concludes that this is an administrative change involving no technical matter, and is acceptable.

3.4 Deletion of TS Index from TSs

The licensee stated in its letter dated April 5, 2005, that the TS Index will be maintained and revised accordingly in the similar manner as the TS Bases under the Administrative Controls section of the TSs. The licensee's current distribution process requires that each time the licensee receives an approved change to the TSs (including a change to an index page) from the NRC or makes a change to the TS Bases under the TS Bases Control program, a transmittal form with the accompanying changes is sent to all controlled copy holders, which includes offsite organizations that maintain controlled copies of the TSs. The NRC staff agrees that the licensee's distribution process is sufficient to keep all stakeholders informed of any changes to the TS Index. Since the TS Index does not include any technical information that is required by 10 CFR 50.36(a) to be reviewed by the NRC staff, the proposed change is found to be acceptable.

The NRC staff reviewed the licensee's LAR to delete the TS Index. The TS Index references where the specific TSs sections can be found throughout the TSs, but does not contain any technical information that is required by 10 CFR 50.36. This is an administrative change, and therefore, no technical evaluation is required for this LAR.

3.5 Summary

The NRC staff has reviewed the licensee's LAR and supplemented information to (1) revise TS 5.3.1 to allow for the use of ZIRLO™ material for the fuel cladding and the use of LTAs in non-limiting core regions; (2) add several NRC-approved TRs to TS 6.9.1.11.1 to allow the use of Westinghouse Nuclear Physics code package and the use of ZIRLO™ cladding; (3) replace the report number of the CESEC III code from CENPD-107 to CE Letter LD-82-001 referenced in Item 6 of TS 6.9.1.11.1; and (4) delete the TS Index from TSs. Based on its evaluation as discussed in Sections 2.0 and 3.0 of this report, the NRC staff finds the LAR acceptable.

4.0 REGULATORY COMMITMENTS

The licensee's June 17, 2004, application, as supplemented by letter dated February 2, 2005, contains the following regulatory commitments:

COMMITMENT	TYPE		SCHEDULED COMPLETION DATE (If Required)
	ONE-TIME ACTION	CONTINUING COMPLIANCE	
The nominal value of 1830 grams of uranium for each fuel rod will be added to the FSAR.	X		Per 10 CFR 50.71(e)
Prior to the use of lead test assemblies (LTAs), fuel designs will be analyzed with applicable NRC staff approved codes and methods and shown by tests or analyses to comply with all fuel safety design bases and to assure no new or different kind of accident from any accident previously evaluated will be created.		Prior to incorporating LTAs in the core and while LTAs are in the core.	
The maximum allowable corrosion limit of 100 microns will be added to the Waterford 3 FSAR.		Prior to the use of ZIRLO™ cladding.	
The corrosion thickness will be calculated using the best estimate models and methods described in topical report CENPD-404-P.		Prior to the use of ZIRLO™ and each core reload that contains ZIRLO™ fuel cladding material.	
ZIRLO™ data ranges for the methodologies in which they are used will be verified during the reload/core design process that is employed for use of methodologies.		Prior to the use of ZIRLO™ and each core reload that contains ZIRLO™ fuel cladding material.	

COMMITMENT	TYPE		SCHEDULED COMPLETION DATE (If Required)
	ONE-TIME ACTION	CONTINUING COMPLIANCE	
The upper design limits for Waterford 3 fuel will be limited to mFDI values of 627 for the majority of the fuel assemblies and 684 for a fraction of fuel pins in a limited number of assemblies (no more than eight fuel assemblies).		X	
Entergy will not lift the modified Fuel Duty Index (mFDI) restriction without either NRC approval of a supplement to CENPD 404-P-A that includes corrosion data from two Combustion Engineering plants (not at the same plant site) or NRC approval of Waterford Steam Electric Station, Unit 3 (Waterford 3) site specific corrosion data.		X	

The NRC staff finds that reasonable controls for the implementation and for subsequent evaluation of proposed changes pertaining to the above regulatory commitments can be provided by the licensee's administrative processes, including its commitment management program. The NRC staff has agreed that Nuclear Energy Institute 99-04, Revision 0, "Guidelines for Managing NRC Commitment Changes," provides reasonable guidance for the control of regulatory commitments made to the NRC staff (see Regulatory Issue Summary 2000-17, "Managing Regulatory Commitments Made by Power Reactor Licensees to the NRC staff," dated September 21, 2000).

5.0 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.

6.0 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 July 20, 2004 (69 FR 43460). 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 amendments.

7.0 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.

8.0 REFERENCES

1. Letter from J. E. Venable, Entergy Nuclear South, to U.S. Nuclear Regulatory Commission, "License Amendment Request NPF-38-258, To Modify Technical Specification (TS) 5.3.1, Fuel Assemblies and TS 6.9.1.11.1, Core Operating Limits Report, Waterford Steam Electric Station, Unit 3, Docket No. 50-382, License No. NPF-38," W3F1-2004-0036, June 17, 2004 (ADAMS Accession No. ML041730312).
2. Letter from K. Peters, Entergy Nuclear South, to U.S. Nuclear Regulatory Commission, "Supplement to Amendment Request NPF-38-258, Modify Technical Specification (TS) 5.3.1, Fuel Assemblies and TS 6.9.1.11.1, Core Operating Limits, Waterford Steam Electric Station, Unit 3, Docket No. 50-382, License No. NPF-38," W3F1-2004-0099, October 18, 2004 (ADAMS Accession No. ML042940273).
3. Letter from R. A. Dodds, III, Entergy Nuclear South, to U.S. Nuclear Regulatory Commission, "Supplement to Amendment Request NPF-38-258, Modify Technical Specification (TS) 5.3.1, Fuel Assemblies and TS 6.9.1.11.1, Core Operating Limits, Waterford Steam Electric Station, Unit 3, Docket No. 50-382, License No. NPF-38," W3F1-2005-0003, February 2, 2005 (ADAMS Accession No. ML050420221).
4. Letter from A. J. Harris, Entergy Nuclear South, to U.S. Nuclear Regulatory Commission, "Supplement to Amendment Request NPF-38-258, Modify Technical Specification (TS) 5.3.1, Fuel Assemblies and TS 6.9.1.11.1, Core Operating Limits, Waterford Steam Electric Station, Unit 3, Docket No. 50-382, License No. NPF-38," W3F1-2005-0013, February 21, 2005 (ADAMS Accession No. ML050540401).
5. Letter from A. J. Harris, Entergy Nuclear South, to U.S. Nuclear Regulatory Commission, "Supplement to Amendment Request NPF-38-258, Modify Technical Specification (TS) 5.3.1, Fuel Assemblies and TS 6.9.1.11.1, Core Operating Limits, Waterford Steam Electric Station, Unit 3, Docket No. 50-382, License No. NPF-38," W3F1-2005-0017, March 8, 2005 (ADAMS Accession No. ML050700215).
6. Letter from A. J. Harris, Entergy Nuclear South, to U.S. Nuclear Regulatory Commission, "Supplement to Amendment Request NPF-38-258, To Modify Technical Specifications (TS) 5.3.1, Fuel Assemblies and TS 6.9.1.11.1, Core Operating Limits Report, Waterford Steam Electric Station, Unit 3, Docket No. 50-382, License No. NPF-38," W3F1-2005-0024, April 5, 2005 (ADAMS Accession No. ML050980114).

7. Letter from A.E. Scherer, Combustion Engineering, to D. G. Eisenhut, US Nuclear Regulatory Commission, "CESEC Digital Simulation of a Combustion Engineering Nuclear Steam Supply System," Enclosure 1-P to LD-82-001, January 6, 1982 (ADAMS Accession No. 8201110696).
8. Letter from J. Donohew, U.S. Nuclear Regulatory Commission, to G. R. Overbeck, Arizona Public Service Company, "Palo Verde Nuclear Generating Station, Units 1, 2, and 3 - Issuance of Amendments Re: Technical Specification 5.6.5b, Core Operating Limits Report (COLR) and Use of ZIRLO Cladding Material (TAC Nos. MB3373, MB3374, and MB3375)," March 12, 2002 (ADAMS Accession No. ML020700710).
9. Letter from C. Thomas, U.S. Nuclear Regulatory Commission, to A.E. Scherer, Combustion Engineering, "Combustion Engineering Thermal-Hydraulic Computer Program CESEC-III," April 3, 1984 (ADAMS Accession No. 8404170527).

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