September 28, 2006

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: PARTIAL APPROVAL OF REQUEST ASSOCIATED WITH THE ULTIMATE HEAT SINK DRY COOLING TOWER FANS (TAC NO. MC5065)

Dear Mr. Venable:

The Commission has issued the enclosed Amendment No. 208 to Facility Operating License No. NPF-38 for the Waterford Steam Electric Station, Unit 3. This amendment consists of changes to the Technical Specifications (TSs) in response to your application dated November 5, 2004.

The amendment modifies Technical Specification (TS) 3.7.4, “Ultimate Heat Sink,” to provide clarification that the ambient temperature monitoring requirement that is specified in TS 3.7.4.d only applies when the affected ultimate heat sink train is considered to be operable. The Commission is not approving the request to delete TS 3.7.4.c, which would allow the plant to take credit for the dry cooling tower fans that are not protected from tornado missiles when a tornado warning is in effect.

A copy of our related Safety Evaluation is also enclosed. The Notice of Issuance related to TS 3.7.4.d will be included in the Commission's next biweekly *Federal Register* notice. The Notice of Denial related to TS 3.7.4.c will also be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,

/RA/

Mel B. Fields, Senior Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-382

Enclosures: 1. Amendment No. 208 to NPF-38
2. Safety Evaluation

cc w/encls: See next page

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ENTERGY OPERATIONS, INC.

DOCKET NO. 50-382

WATERFORD STEAM ELECTRIC STATION, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 208
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 November 5, 2004, 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.

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/

David Terao, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

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

Date of Issuance: September 28, 2006

ATTACHMENT TO LICENSE AMENDMENT NO. 208

TO FACILITY OPERATING LICENSE NO. NPF-38

DOCKET NO. 50-382

Replace page 4 of Operating License No. NPF-38 with the attached revised page 4.

Replace the following page of the Appendix A Technical Specifications with the attached revised page. The revised page is identified by an amendment number and contains a marginal line indicating the area of change.

REMOVE	INSERT
3/4 7-13	3/4 7-13

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 208 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 November 5, 2004 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML043150218), Entergy Operations, Inc. (the licensee), requested changes to the Technical Specifications (TSs) for Waterford Steam Electric Station, Unit 3 (Waterford 3).

Specifically, the licensee proposes to revise TS 3.7.4, “Ultimate Heat Sink [UHS],” to provide clarification that the ambient temperature monitoring requirement that is specified in TS 3.7.4.d only applies when the affected ultimate heat sink train is considered to be operable and to delete TS 3.7.4.c. Deleting TS 3.7.4.c. would allow the plant to take credit for the dry cooling tower (DCT) fans that are not protected from tornado missiles when a tornado warning is in effect. The TS Bases would also be changed in accordance with the Waterford 3 TS Bases Control Program (TS 6.16).

2.0 REGULATORY EVALUATION

Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.36, "Technical specifications," requires that the TSs include items in five specific categories. These categories include: (1) safety limits, limiting safety system settings, and limiting control settings; (2) limiting conditions for operation; (3) surveillance requirements; (4) design features; and (5) administrative controls. The acceptability of the proposal to modify TS 3.7.4.d and delete TS 3.7.4.c is based in part on continued compliance with 10 CFR 50.36.

Waterford 3 is designed to withstand the effects of tornado and high wind generated missiles so as not to impact the health and safety of the public in accordance with the requirements specified by 10 CFR Part 50, Appendix A, General Design Criteria (GDC) 2 and 4. The Waterford 3 design basis as originally reviewed and approved by the Nuclear Regulatory Commission (NRC) and reflected in Section 3.5.1.4 of the Waterford 3 Final Safety Analysis Report credited protective features for satisfying these GDC requirements. In reviewing requests of this nature, the NRC staff verifies that a methodology exists that assures the plant design and licensing basis continue to meet GDC 2 and 4.

3.0 TECHNICAL EVALUATION

3.1 Proposed Change to Delete TS 3.7.4.c

TS 3.7.4.c currently requires all nine of the tornado protected DCT fans for Waterford 3 to be operable whenever a tornado warning for the Waterford site is in effect. Entergy has completed a risk assessment using the Electric Power Research Institute (EPRI) TORMIS methodology to show that the probability of a tornado missile causing damage to the unprotected DCT fans is sufficiently small to allow the unprotected DCT fans to also be credited for tornado mitigation. The licensee indicated that allowing the unprotected DCT fans to be credited as proposed would provide additional flexibility in maintaining the UHS operable whenever a tornado warning is in effect for the Waterford 3 site, thereby reducing operational burden.

Similar to Waterford 3, the design bases of nuclear power plants typically credited protective features for satisfying the provisions of GDC 2 and 4 with respect to tornado missiles. During subsequent inspections and design reviews, NRC inspectors and licensees found that some of the structures, systems, and components (SSCs) that should have been protected from the effects of tornado missiles were not adequately protected in accordance with the design basis of the plant. As an alternative to implementing costly plant modifications to correct these vulnerabilities, EPRI developed the TORMIS methodology for assessing the probability of damage to SSCs that were relied upon for tornado mitigation but were not adequately protected from tornado missiles. Plant modifications would not be required for situations where the probability of damage due to tornado missiles was demonstrated to be sufficiently small by the TORMIS analysis. The NRC staff approved use of the TORMIS methodology in a safety evaluation dated October 26, 1983, indicating that the TORMIS methodology could be utilized for assessing the need for positive tornado missile protection for specific safety-related plant features but that use of the TORMIS methodology (or any tornado missile probabilistic study) should be limited to the evaluation of specific plant features where additional costly tornado missile protective barriers or alternative systems are under consideration.

After the operating license for Waterford 3 was issued and contrary to the original plant design basis, the licensee identified SSCs that were not protected from the effects of tornado missiles. License Amendment No. 168 for Waterford 3, dated September 7, 2000 (ADAMS Accession No. ML003749019), subsequently approved the licensee's use of the TORMIS methodology for demonstrating that these specific SSCs do not require the installation of additional tornado missile protective barriers due to the low probability that a tornado missile will strike these unprotected SSCs.

The acceptability of the licensee's amendment request to delete TS 3.7.4.c is based upon continued compliance with GDC 2 and 4 in a manner that is consistent with the plant licensing basis and based upon consistency with prior NRC approvals. As clarified in License Amendment No. 168 for Waterford 3 and consistent with other applications of the TORMIS methodology that have been approved by the NRC: a) the deterministic approach in the Standard Review Plan (SRP) should continue to be used to assure adequate protection of SSCs from the effects of tornado missiles and the TORMIS methodology should be used on a case-by-case basis for assessing specific plant features which are exceptions; and b) the TORMIS methodology may not be used for justifying the permanent or temporary removal of existing barriers.

The licensee's request to credit use of the six unprotected DCT fans as an alternative to using the protected DCT fans and to eliminate the TS requirement that the nine protected DCT fans be operable whenever a tornado warning is in effect is tantamount to allowing tornado missile barriers for as many as six protected DCT fans to be removed on a temporary basis. While crediting the unprotected DCT fans does not cause tornado missile barriers to be physically removed or modified, the result is the same in that the barriers are not necessary (and could just as well be removed) if the equipment they are designed to protect is not required to be operable. The NRC staff had previously provided this viewpoint in a letter to Entergy dated May 27, 2004 (ADAMS Accession No. ML041490149). In addition, deleting TS 3.7.4.c would permit up to six of the protected fans to be inoperable for an extended period of time. Using TORMIS to justify taking credit for unprotected SSCs that are not required to be relied upon for tornado mitigation by the plant design basis (other than for demonstrating defense-in-depth) and/or as a means of relaxing existing TS requirements is not consistent with the NRC-approved application of the TORMIS methodology or the reasons why TORMIS was initially developed. In particular, the NRC has approved the use of the TORMIS methodology only for the evaluation of specific plant features where additional costly tornado missile protective barriers or alternative systems are under consideration. More specifically, consistent with previous license amendments in which the staff has approved plant-specific application of the TORMIS methodology (such as License Amendment No. 168 for Waterford 3), use of the TORMIS methodology is limited to demonstrating adequate protection and compliance with the provisions of GDC 2 and 4 for those SSCs that are not adequately protected from tornado missiles as required by the plant design basis. Therefore, because the licensee's proposed use of TORMIS is not consistent with the NRC-approved application of the TORMIS methodology, the proposed change to delete TS 3.7.4.c is unacceptable. Similarly, the proposed editorial changes that would be appropriate if TS 3.7.4.c were deleted are also unacceptable.

The TORMIS methodology is not recognized by the NRC as an approved method for justifying the elimination of existing tornado protected SSCs or tornado barriers nor for justifying the elimination or relaxation of TS (or other) requirements that have been established for those SSCs and barriers. As stated in the NRC safety evaluation that approved License Amendment No. 168 for Waterford 3, the deterministic approach in the current SRP for tornados should continue to be used, with the probabilistic risk assessment approach employed on a case-by-case basis for assessing specific plant features which are exceptions. Along these lines, use of the TORMIS methodology to justify taking credit for additional SSCs that are not tornado protected (but satisfy all other applicable design-basis requirements) and are needed in order to resolve licensing basis deficiencies that have been identified, is consistent with the staff's approved use of the TORMIS methodology. Accordingly, licensees may use TORMIS for this purpose and for justifying proposed TS changes that are affected in this regard. However, any future proposed use of TORMIS should be specifically focused on resolving design-basis problems that have been identified and not for promoting (in total or in part) operational flexibility or convenience.

3.2 Proposed Change to Modify TS 3.7.4.d

TS 3.7.4.d requires the licensee to verify that the minimum UHS fan requirements specified by TS Table 3.7-3 are satisfied at least once every 2 hours when any UHS fan is inoperable. The capability of each UHS train to dissipate the design-basis heat load is dependent in part on the ambient temperature conditions and the number of fans that are available for circulating the air.

As the number of operable fans is reduced, the ambient temperature must be limited to a lower value in order to accommodate the same heat load without exceeding the assumed maximum UHS outlet water temperature (among other things). However, if a UHS train is inoperable for some reason, it cannot be credited for dissipating its design-basis heat load irrespective of how many of its fans are operable or what the ambient temperature conditions are. The proposed change to TS 3.7.4.d provides clarification that the ambient temperature monitoring requirement that is specified only applies when the affected UHS train is considered to be operable. Because the proposed change is a clarification of the existing requirement that is consistent with the intent of the specification, the proposed change to TS 3.7.4.d is considered to be 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 December 7, 2004 (69 FR 70717). 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.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, for the proposed change to TS 3.7.4.d only, 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.

The Commission has further concluded, based on the considerations discussed above, that the proposed change to TS 3.7.4.c is considered to be unacceptable

Principal Contributor: J. Tatum

Date: September 28, 2006

Waterford Steam Electric Station, Unit 3

cc:

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