



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

October 14, 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: DELETION OF OPERATING LICENSE CONDITION 2.C.14,  
FUEL MOVEMENT IN THE FUEL HANDLING BUILDING (TAC NO. ME3452)

Dear Sir or Madam:

The Commission has issued the enclosed Amendment No. 229 to Facility Operating License No. NPF-38 for the Waterford Steam Electric Station, Unit 3. This amendment consists of changes to Operating License Condition 2.C.14, in response to your application dated February 24, 2010.

The amendment deletes Operating License Condition 2.C.14, Fuel Movement in the Fuel Handling Building, due to your election to comply with Section 50.68 of Title 10 of the *Code of Federal Regulations* (10 CFR) requirements. Operating License Condition 2.C.14, which essentially requires no more than one fuel assembly shall be out of its shipping container or storage location, was one basis for the facility's previous exemption from the criticality alarm system requirements of 10 CFR 70.24. The criticality accident requirements can be met by complying with either 10 CFR 70.24 or 10 CFR 50.68 requirements. The 10 CFR 50.68 criteria are now being used; therefore, Operating License Condition 2.C.14 is no longer required.

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. 229 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. 229  
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 February 24, 2010, complies with the standards and requirement 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

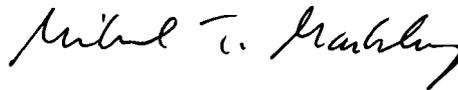
The Technical Specifications contained in Appendix A, as revised through Amendment No. 229, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. EOI shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

In addition, Paragraph 2.C.14 of Facility Operating License No. NPF-38 is hereby amended to read as follows:

14. DELETED

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



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: October 14, 2010

ATTACHMENT TO LICENSE AMENDMENT NO. 229

TO FACILITY OPERATING LICENSE NO. NPF-38

DOCKET NO. 50-382

Replace the following pages of the Facility Operating License 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 -

-7-

-7-

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. 229, 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.

13. Response to Salem ATWS Event (Section 7.2.9, SSER 8)

The licensee shall submit responses and implement the requirements of Generic Letter 83-28 on a schedule which is consistent with that given in the licensee's letter of May 30, 1984.

14. DELETED

15. Qualification of Personnel (Section 13.1.3, SSER 8)

EOI shall have on each shift operators who meet the requirements described in Attachment 2. Attachment 2 is hereby incorporated into this license.

16. Operational QA Enhancement Program (SSER 9)

The items listed below shall be completed on the scheduled indicated.

- (a) Prior to completion of Phase III of the Waterford 3 startup test program, the licensee shall conduct a comprehensive audit of the Operational QA Program that will include a summary QA document of the Operational QA Program, the definition of responsibilities and interfaces, and guidance on the location of information on QA matters at all levels of concern.
- (b) Prior to completion of Phase III of the Waterford 3 startup test program, the licensee shall supplement its existing QA training program to incorporate specific discussion of QA problems experienced during construction and how this experience applies to operational activities.
- (c) Prior to completion of Phase III of the Waterford 3 startup test program, the licensee shall address each of the recommendations in the Task Force Support Group (TFSG) Limited Scope Audit Report of LP&L Operational Quality Assurance Program, dated December 4, 1984.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 229 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 February 24, 2010 (Reference 1), Entergy Operations, Inc. (the licensee), requested changes to the Facility Operating License No. NPF-38 for Waterford Steam Electric Station, Unit 3 (Waterford 3).

The proposed amendment deletes Operating License Condition 2.C.14, Fuel Movement in the Fuel Handling Building, due to the licensee's election to comply with the requirements of Section 50.68, "Criticality accident requirements," of Title 10 of the *Code of Federal Regulations* (10 CFR). Operating License Condition 2.C.14 currently states.

In the fuel handling building, during Modes 1-5, no more than one fuel assembly shall be outside an approved shipping container, an approved storage rack, the fuel transfer tube (including upender), the fuel elevator, or the spent fuel handling machine.

In addition to the above fuel assembly inspection/reconstitution may take place outside of an approved storage rack, when required, provided that the inspection/reconstitution area is borated to a level at or above 1720 ppm [parts per million].

Operating License Condition 2.C.14 was one basis for the facility's previous exemption from the criticality alarm system requirements of 10 CFR 70.24. The criticality accident requirements can be met by complying with either 10 CFR 70.24 or 10 CFR 50.68 requirements. Since the licensee has elected to comply with 10 CFR 50.68, Operating License Condition 2.C.14 is no longer needed to ensure a subcritical condition in the new fuel vault or the spent fuel pool.

## 2.0 REGULATORY EVALUATION

The regulations in 10 CFR Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants," Criterion 62, "Prevention of criticality in fuel storage and handling," require that:

Criticality in the fuel storage and handling system shall be prevented by physical systems or processes, preferably by use of geometrically safe configurations.

The regulations in 10 CFR 50.68 and 10 CFR 70.24 provide criticality accident requirements.

The regulations in 10 CFR 50.36(c)(4) require that:

Design features to be included are those features of the facility such as materials of construction and geometric arrangements, which, if altered or modified, would have a significant effect on safety and are not covered in categories described in paragraphs (c) (1), (2), and (3) of this section.

## 3.0 TECHNICAL EVALUATION

### 3.1 Background

On February 9, 1983, the U.S. Nuclear Regulatory Commission (NRC) issued Materials License No. SNM-1913 (Reference 2) authorizing the receipt, possession, inspection and storage of uranium enriched in the U-235 isotope, contained in fuel assemblies at Waterford 3. In addition, the SNM license granted an exemption from the criticality alarm system requirements of 10 CFR 70.24 based upon inherent features associated with the storage and inspection of unirradiated fuels. A condition of the SNM license and a basis of the 10 CFR 70.24 exemption specified that "no more than one fuel assembly shall be out of its shipping container or storage location at a given time."

Relevant provisions of SNM-1913 were incorporated into the Facility Operating License No. NPF-38 upon its issuance on March 16, 1985 (Reference 3). Included was NPF-38 License Condition 2.C.14 which provided that "no more than one fuel assembly shall be outside an approved shipping container, storage rack or fuel transfer tube in the fuel handling building at any time."

On September 30, 2009, the NRC approved Amendment No. 223 (Reference 4), which added a change to Technical Specification section 5.6 (Fuel Storage) and added new Technical Specification 3/4.9.12 (Spent Fuel Pool Boron Concentration). The changes made to the Technical Specifications comply with the requirements of 10 CFR 50.68 as well as meet the 10 CFR 50.36 requirements.

The proposed change for deletion of Operating License Condition 2.C.14 has been evaluated to determine whether applicable regulations and requirements continue to be met. The regulations in 10 CFR 50.68 and 10 CFR 70.24 provide criticality accident requirements. As stated above, the NRC approved Waterford 3's use of the 10 CFR 50.68 criteria in Reference 4. Therefore, the proposed change does not require any exemptions or relief from regulatory requirements.

### 3.2 NRC Staff Evaluation

The licensee's letters dated September 17, 2008 (Reference 5), and June 30, 2009 (Reference 6), and approved as Amendment 223 on September 30, 2009 (Reference 4), indicate that the Waterford 3 proposed change will comply with the requirements of 10 CFR 50.68. These letters also include the 10 CFR 50.68 requirements and how they are met. The first criterion, in 10 CFR 50.68(b)(1), states that:

Plant procedures shall prohibit the handling and storage at any one time of more fuel assemblies than have been determined to be safely subcritical under the most adverse moderation conditions feasible by unborated water.

Also, the criterion in 10 CFR 50.68(b)(4) states that:

If credit is taken for soluble boron, the k-effective [estimated ratio of neutron production to neutron absorption and leakage] of the spent fuel storage racks loaded with fuel of the maximum fuel assembly reactivity must not exceed 0.95, at a 95 percent probability, 95 percent confidence level, if flooded with borated water, and the k-effective must remain below 1.0 (subcritical), at a 95 percent probability, 95 percent confidence level, if flooded with unborated water.

The licensee provided criticality analysis of both the new fuel vault and the spent fuel pool to show compliance with the above 10 CFR 50.68 requirements.

Operating License Condition 2.C.14 also contains a minimum required spent fuel pool boron concentration of 1720 ppm. Amendment 223 added Technical Specification 3.9.12 (Spent Fuel Pool Boron Concentration) which requires a boron concentration greater than or equal to 1900 ppm when fuel assemblies are stored in the spent fuel pool.

The above requirements resolve the need for Waterford 3 Operating License Condition 2.C.14. Inasmuch as the license condition is no longer needed, the licensee has requested that it be deleted. The NRC has reviewed the proposed change and concludes that the license condition is no longer required, to meet the requirements of 10 CFR 50.36, 50.68, and 70.24, and the change is, therefore, 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 May 4, 2010 (75 FR 23813). 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.

## 7.0 REFERENCES

1. Kowalewski, J., Entergy Operations, Inc., letter to U.S. Nuclear Regulatory Commission, "Operating License Condition 2.C.14 (Fuel Movement in the Fuel Handling Building) Deletion," dated February 24, 2010 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML100600437).
2. Page, R.G., U.S. Nuclear Regulatory Commission, letter to Louisiana Power and Light Company, "NRC Waterford Steam Electric Station Unit 3 Issuance of Special Nuclear Material License SNM-1913," dated February 9, 1983 (ADAMS Legacy Library Accession No. 8302230061).
3. Thompson, H.L., U.S. Nuclear Regulatory Commission, letter to R.S. Leddick, Louisiana Power and Light Company, "Waterford Steam Electric Station, Unit 3 – Issuance of Facility Operating License," dated March 16, 1985 (ADAMS Accession No. ML021720211).
4. Kalyanam, N., U.S. Nuclear Regulatory Commission, letter to Entergy Operations, Inc., "Waterford Steam Electric Plant, Unit 3 – Issuance of Amendment re: Modify TS 5.6, 'Fuel Storage'; Add New TS 3/4.9.12, 'Spent Fuel Pool Boron Concentration,' and TS 3/4.9.13, 'Spent Fuel Storage' (TAC No. MD9685)," dated September 30, 2009 (ADAMS Accession No. ML092050312).
5. Walsh, K., Entergy Operations, Inc., letter to U.S. Nuclear Regulatory Commission, "License Amendment Request to Modify Technical Specification Section 5.6, Fuel Storage and Add New Technical Specification 3/4.9.12, Spent Fuel Pool Boron Concentration," dated September 17, 2008 (ADAMS Accession No. ML082660649).

6. Christian, K., Entergy Operations, Inc., letter to U.S. Nuclear Regulatory Commission, "Response, Request for Additional Information RAI #2 "RE: License Amendment Request to Modify Technical Specification Section 5.6, Fuel Storage, and Add New Technical Specification 3/4.9.12, Spent Fuel Pool (SFP) Boron Concentration," dated June 30, 2009 (ADAMS Accession No. ML091831258).

Principal Contributor: D. Cunanan

Date: October 14, 2010

October 14, 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  
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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:

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2. Safety Evaluation

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\*SE memo dated

\*\*see prev. concurrence

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NAME	NKalyanam**	JBurkhardt	AUses*	STurk - NLO**	MMarkley	NKalyanam
DATE	9/30/10	10/1/10	8/9/10	9/29/10	10/14/10	10/14/10

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