



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

ENERGY LOUISIANA, LLC

ENERGY OPERATIONS, INC.

DOCKET NO. 50-382

WATERFORD STEAM ELECTRIC STATION, UNIT 3

RENEWED FACILITY OPERATING LICENSE

Renewed License No. NPF-38

1. The Nuclear Regulatory Commission (the Commission or the NRC) has found that:
 - A. The application for renewed license filed by Entergy Operations, Inc. and Entergy Louisiana, LLC complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I, and all required notifications to other agencies or bodies have been duly made;
 - B. Construction of the Waterford Steam Electric Station, Unit 3 (facility), has been substantially completed in conformity with Construction Permit No. CPPR-103 and the application as amended, the provisions of the Act, and regulations of the Commission;
 - C. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the regulations of the Commission (except as exempted from compliance in Section 1.I and 2.D below);
 - D. There is reasonable assurance: (i) that the activities authorized by this renewed operating license 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 set forth in 10 CFR Chapter I (except as exempted from compliance in Sections 1.I and 2.D below);
 - E. Entergy Operations, Inc. (EOI) is technically qualified to engage in the activities authorized by this renewed operating license in accordance with the Commission's regulations set forth in 10 CFR Chapter I;
 - F. Entergy Louisiana, LLC has satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements", of the Commission's regulations;
 - G. The issuance of this renewed license will not be inimical to the common defense and security or to the health and safety of the public;

- H. After weighing the environmental, economic, technical, and other benefits of the facility against environmental and other costs, and after considering available alternatives, the issuance of the Renewed Facility Operating License No. NPF-38, subject to the conditions for protection of the environment set forth in the Environmental Protection Plan attached as Appendix B, is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied;
 - I. The receipt, possession, and use of source, byproduct, and special nuclear material as authorized by this renewed license will be in accordance with the Commission's regulations in 10 CFR Parts 30, 40 and 70, except that an exemption to the provisions of 10 CFR 70.24 is granted as described in Supplement No. 8 to the Safety Evaluation Report. This exemption is authorized under 10 CFR 70.24(d) and will not endanger life or property or the common defense and security and is otherwise in the public interest; and
 - J. Actions have been identified and have been or will be taken with respect to (1) managing the effects of aging during the period of extended operation on the functionality of structures and components that have been identified to require review under 10 CFR 54.21(a)(1); and (2) time-limited aging analyses that have been identified to require review under 10 CFR 54.21(c), such that there is reasonable assurance that the activities authorized by this renewed license will continue to be conducted in accordance with the current licensing basis, as defined in 10 CFR 54.3, for the facility, and that any changes made to the facility's current licensing basis in order to comply with 10 CFR 54.29(a) are in accordance with the Act and the Commission's regulations.
2. Renewed Facility Operating License No. NPF-38 is hereby issued to Entergy Louisiana, LLC and Entergy Operations, Inc. (together, the licensees) to read as follows:
- A. This renewed license applies to the Waterford Steam Electric Station, Unit 3, a pressurized water reactor and associated equipment (the facility), owned by Entergy Louisiana, LLC. The facility is located on the Entergy Louisiana, LLC site in St. Charles Parish, Louisiana and is described in the Entergy Louisiana, LLC Final Safety Analysis Report as amended, and the Environmental Report as amended.
 - B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses:
 - 1. Entergy Louisiana, LLC, pursuant to Section 103 of the Act and 10 CFR Part 50, to possess but not operate the facility at the designated location in St. Charles Parish, Louisiana in accordance with the procedures and limitations set forth in this renewed license;
 - 2. EOI, pursuant to Section 103 of the Act and 10 CFR Part 50, to possess, use and operate the facility at the designated location in St. Charles Parish, Louisiana in accordance with the procedures and limitations set forth in this renewed license;
 - 3. EOI, pursuant to the Act and 10 CFR Part 70, to receive, possess, and use at any time at the facility site and as designated solely for the facility, special

nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;

4. EOI, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
5. EOI, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
6. EOI, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility authorized herein.
7.
 - (a) Entergy Louisiana, LLC, to transfer any portion of its 100% undivided ownership interest (up to and inclusive \$515 million of aggregate appraised value) in the facility to equity investors, and at the same time lease back for such equity investors, such interests sold in the facility and receive from such equity investors, consistent with Entergy Louisiana, LLC leases, the right to use and enjoy the benefits of the undivided ownership interests sold in the facility. The terms of the leases are for approximately 27 1/2 years subject to right of renewal. Such sale and leaseback transactions are subject to the condition that the equity investors and anyone else who may acquire an interest under this transaction(s) are prohibited from exercising directly 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 renewed 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 renewed 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 staffs 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 renewed 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. 251, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the renewed license. EOI shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. Antitrust Conditions

- (a) Entergy Louisiana, LLC shall comply with the antitrust license conditions in Appendix C to this renewed license.
- (b) Entergy Louisiana, LLC is responsible and accountable for the actions of its agents to the extent said agent's actions contravene the antitrust license conditions in Appendix C to this renewed license.

4. Broad Range Toxic Gas Detectors (Section 2.2.1, SSER 6¹)

Prior to startup following the first refueling outage, the licensees² shall propose technical specifications for the Broad Range Toxic Gas Detection System for inclusion in Appendix A to this license.

5. Initial Inservice Inspection Program (Section 6.6, SSER 5)

By June 1, 1985, the licensees must submit an initial inservice inspection program for staff review and approval.

6. Environmental Qualification (Section 3.11, SSER 8)

Prior to November 30, 1985, the licensees shall environmentally qualify all electrical equipment according to the provisions of 10 CFR 50.49.

7. Axial Fuel Growth (Section 4.2, SSER 5)

Prior to entering Startup (Mode 2) after each refueling, EOI shall either provide a report that demonstrates that the existing fuel element assemblies (FEA) have sufficient available shoulder gap clearance for at least the next cycle of operation, or identify to the NRC and implement a modified FEA design that has adequate shoulder gap clearance for at least the next cycle of operation. This requirement will apply until the NRC concurs that the shoulder gap clearance provided is adequate for the design life of the fuel.

8. Emergency Preparedness (Section 13.3, SSER 8)

In the event that the NRC finds that the lack of progress in completion of the procedures in the Federal Emergency Management Agency's final rule, 44 CFR Part 350, is an indication that a major substantive problem exists in achieving or maintaining an adequate state of emergency preparedness, the provisions of 10 CFR Section 50.54(s)(2) will apply.

9. Fire Protection

EOI shall implement and maintain in effect all provisions of the approved fire protection program that comply with 10 CFR 50.48(a) and 10 CFR 50.48(c), as specified in the license amendment request dated November 17, 2011 (and supplements dated January 26, 2012, September 27, 2012, October 16, 2012, May 16, 2013, June 26, 2013, December 18, 2013, June 11, 2014, March 12, 2015, April 10, 2015, May 14, 2015, August 27, 2015, September 8, 2015, September 24, 2015, October 13, 2015, and January 18, 2016), and as approved in the safety evaluation dated June 27, 2016. Except where NRC approval for changes or deviations is required by 10 CFR 50.48(c), and provided no other regulation,

¹ The parenthetical notation following the title of many license conditions denotes the section of the Safety Evaluation Report and/or its supplements wherein the license condition is discussed.

² The license originally authorized Entergy Louisiana, LLC to possess, use, and operate the facility. Consequently, certain historical references applicable to Entergy Louisiana, LLC as one of the "licensees" appear in these license conditions.

technical specification, license condition or requirement would require prior NRC approval, EOI may make changes to the fire protection program without prior approval of the Commission if those changes satisfy the provisions set forth in 10 CFR 50.48(a) and 10 CFR 50.48(c), the change does not require a change to a technical specification or a license condition, and the criteria listed below are satisfied.

Risk-Informed Changes that May Be Made Without Prior NRC Approval

A risk assessment of the change must demonstrate that the acceptance criteria below are met. The risk assessment approach, methods, and data shall be acceptable to the NRC and shall be appropriate for the nature and scope of the change being evaluated; be based on the as-built, as-operated, and maintained plant; and reflect the operating experience at the plant. Acceptable methods to assess the risk of the change may include methods that have been used in the peer-reviewed fire PRA model, methods that have been approved by NRC through a plant-specific license amendment or NRC approval of generic methods specifically for use in NFPA 805 risk assessments, or methods that have been demonstrated to bound the risk impact.

- (a) Prior NRC review and approval is not required for changes that clearly result in a decrease in risk. The proposed change must also be consistent with the defense-in-depth philosophy and must maintain sufficient safety margins. The change may be implemented following completion of the plant change evaluation.
- (b) Prior NRC review and approval is not required for individual changes that result in a risk increase less than 1×10^{-7} /year (yr) for CDF and less than 1×10^{-8} /yr for LERF. The proposed change must also be consistent with the defense-in-depth philosophy and must maintain sufficient safety margins. The change may be implemented following completion of the plant change evaluation.

Other Changes that May Be Made Without Prior NRC Approval

- (1) Changes to NFPA 805, Chapter 3, Fundamental Fire Protection Program

Prior NRC review and approval are not required for changes to the NFPA 805, Chapter 3, fundamental fire protection program elements and design requirements for which an engineering evaluation demonstrates that the alternative to the Chapter 3 element is functionally equivalent or adequate for the hazard. EOI may use an engineering evaluation to demonstrate that a change to an NFPA 805, Chapter 3, element is functionally equivalent to the corresponding technical requirement. A qualified fire protection engineer shall perform the engineering evaluation and conclude that the change has not affected the functionality of the component, system, procedure, or physical arrangement, using a relevant technical requirement or standard. EOI may use an engineering evaluation to demonstrate that

changes to certain NFPA 805, Chapter 3, elements are acceptable because the alternative is "adequate for the hazard." Prior NRC review and approval would not be required for alternatives to four specific sections of NFPA 805, Chapter 3, for which an engineering evaluation demonstrates that the alternative to the Chapter 3 element is adequate for the hazard. A qualified fire protection engineer shall perform the engineering evaluation and conclude that the change has not affected the functionality of the component, system, procedure, or physical arrangement, using a relevant technical requirement or standard. The four specific sections of NFPA 805, Chapter 3, are as follows:

- "Fire Alarm and Detection Systems" (Section 3.8);
- "Automatic and Manual Water-Based Fire Suppression Systems" (Section 3.9);
- "Gaseous Fire Suppression Systems" (Section 3.10); and
- "Passive Fire Protection Features" (Section 3.11).

This condition does not apply to any demonstration of equivalency under Section 1.7 of NFPA 805.

(2) Fire Protection Program Changes that Have No More than Minimal Risk Impact

Prior NRC review and approval are not required for changes to EOI 's fire protection program that have been demonstrated to have no more than a minimal risk impact. EOI may use its screening process as approved in the NRC safety evaluation dated June 27, 2016, to determine that certain fire protection program changes meet the minimal criterion. EOI shall ensure that fire protection defense-in-depth and safety margins are maintained when changes are made to the fire protection program.

Transition License Conditions

- (1) Before achieving full compliance with 10 CFR 50.48(c), as specified by (2) and (3) below, risk-informed changes to EOI 's fire protection program may not be made without prior NRC review and approval unless the change has been demonstrated to have no more than a minimal risk impact, as described in (2) above.
- (2) EOI shall implement the modifications to its facility, as described in Attachment S, Table S-1 "Plant Modifications" in Entergy Operations, Inc. letter W3F1-2016-0003, dated January 18, 2016, to complete the transition to full compliance with 10 CFR 50.48(c) by completion of the first refueling outage greater than 12 months following issuance of the license amendment.

EOI shall maintain appropriate compensatory measures in place until completion of the modification listed as S 1-5, (Installation of qualified 1-hour ERFBS fire wrap barrier in Fire Area RAB 6). All other

modifications listed in Table S-1 are either installed or have no associated compensatory measure.

- (3) EOI shall implement the items listed in Attachment S, Table S-2, "Implementation Items," in Entergy Operations, Inc. letter W3F1-2016-0003, dated January 18, 2016, within 6 months following issuance of the license amendment.
10. Post-Fuel-Loading Initial Test Program (Section 14, SSER 10)

Any changes to the Initial Test Program described in Section 14 of the FSAR made in accordance with the provisions of 10 CFR 50.59 shall be reported in accordance with 50.59(b) within one month of such change.
11. Emergency Response Capabilities (Section 22, SSER 8)

EOI shall comply with the requirements of Supplement 1 to NUREG-0737 for the conduct of a Detailed Control Room Design Review (DCRDR). Prior to May 1, 1985, EOI shall submit for staff review and approval the DCRDR Summary Report, including a description of the process used in carrying out the function and task analysis performed as a part of both the DCRDR and the Procedures Generation Package efforts.
12. Reactor Coolant System (RCS) Depressurization Capability (Section 5.4.3, SSER 8)

By June 18, 1985, the licensees shall submit the results of confirmatory tests regarding the depressurization capability of the auxiliary pressurizer spray (APS) system. This information must demonstrate that the APS system can perform the necessary depressurization to meet the steam generator single-tube rupture accident acceptance criteria (SRP 15.6.3) with loop charging isolation valve failed open. Should the test results fail to demonstrate that the acceptance criteria are met, the licensees must provide for staff review and approval, justification for interim operation, and a schedule for corrective actions.
13. Response to Salem ATWS Event (Section 7.2.9, SSER 8)

The licensees 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 renewed 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 licensees 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 licensees 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 licensees 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.
- (d) Prior to completion of Phase III of the Waterford 3 startup test program, the licensees shall complete corrective actions related to the 23 NRC issues as identified in the LP&L responses.

17. Basemat

EOI shall comply with its commitments to perform a basemat cracking surveillance program and additional confirmatory analyses of basemat structural strength as described in its letter of February 25, 1985. Any significant change to this program shall be reviewed and approved by the NRC staff prior to its implementation.

18. Mitigation Strategy License Condition

Develop and maintain strategies for addressing large fires and explosions and that include the following key areas:

- (a) Fire fighting response strategy with the following elements:
 - 1. Pre-defined coordinated fire response strategy and Guidance
 - 2. Assessment of mutual aid fire fighting assets
 - 3. Designated staging areas for equipment and materials
 - 4. Command and control
 - 5. Training of response personnel
- (b) Operations to mitigate fuel damage considering the following:
 - 1. Protection and use of personnel assets
 - 2. Communications
 - 3. Minimizing fire spread

4. Procedures for implementing integrated fire response strategy
5. Identification of readily-available pre-staged equipment
6. Training on integrated fire response strategy
7. Spent fuel pool mitigation measures

(c) Actions to minimize release to include consideration of:

1. Water spray scrubbing
2. Dose to onsite responders

19. Control Room Envelope Habitability Program

Upon implementation of Amendment No. 218 adopting TSTF-448, Revision 3, the determination of control room envelope (CRE) unfiltered air inleakage as required by SR 6.5.17, in accordance with TS 6.5.17.c.(i), the assessment of CRE habitability as required by Specification 6.5.17.c.(ii), and the measurement of CRE pressure as required by Specification 6.5.17.d, shall be considered met. Following implementation:

- (a) The first performance of SR 6.5.17, in accordance with Specification 6.5.17.c.(i), shall be within the specified Frequency of 6 years, plus the 18-month allowance of SR 4.0.2, as measured from April 17, 2004, the date of the most recent successful tracer gas test, as stated in the October 8, 2004 letter response to Generic Letter 2003-01, or within the next 18 months if the time period since the most recent successful tracer gas test is greater than 6 years.
- (b) The first performance of the periodic assessment of CRE habitability, Specification 6.5.17.c.(ii), shall be within 3 years, plus the 9-month allowance of SR 4.0.2, as measured from April 17, 2004, the date of the most recent successful tracer gas test, as stated in the October 8, 2004 letter response to Generic Letter 003-01, or within the next 9 months if the time period since the most recent successful tracer gas test is greater than 3 years.
- (c) The first performance of the periodic measurement of CRE pressure, Specification 6.5.17.d, shall be within 18 months, plus the 138 days allowed by SR 4.0.2, as measured from August 13, 2008, the date of the most recent successful pressure measurement test, or within 138 days if not performed previously.

20. Control Element Assembly Drop Time Curve Validation (Amendment 246)

Prior to Cycle 21 Mode 2 operation, the licensees shall verify the control element assembly drop time test data demonstrates faster control element assembly drop times than the drop time curve provided in Table 15.0-5 of the Final Safety Analysis Report, as amended.

21. License Renewal License Conditions

- (a) The information in the FSAR supplement, submitted pursuant to 10 CFR 54.21(d) and as revised during the license renewal application review process, and licensee commitments as listed in Appendix A of the "Safety Evaluation Report Related to the License Renewal of Waterford Steam Electric Station Unit 3," are collectively the "License Renewal FSAR Supplement." This Supplement is henceforth part of the FSAR, which will be updated in accordance with 10 CFR 50.71(e). As such, EOI may make changes to the programs, activities, and commitments described in this Supplement, provided the EOI evaluates such changes pursuant to the criteria set forth in 10 CFR 50.59, "Changes, Tests, and Experiments," and otherwise complies with the requirements in that section.
 - (b) The License Renewal FSAR Supplement, as defined in license condition 21(a) above, describes certain programs to be implemented and activities to be completed prior to the period of extended operation (PEO).
 - (1) EOI shall implement those new programs and enhancements to existing programs no later than 6 months before the PEO.
 - (2) EOI shall complete those activities by the 6 month date prior to the PEO or to the end of the last refueling outage before the PEO, whichever occurs later.
 - (3) EOI shall notify the NRC in writing within 30 days after having accomplished item (b)(1) above and include the status of those activities that have been or remain to be completed in item (b)(2) above.
- D. The facility requires an exemption from certain requirements of Appendices E and J to 10 CFR Part 50. These exemptions are described in the Office of Nuclear Reactor Regulation's Safety Evaluation Report, Supplement No. 10 (Section 6.1.2) and Supplement No. 8 (Section 6.2.6), respectively. These exemptions are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest. These exemptions are, therefore, hereby granted pursuant to 10 CFR 50.12. With the granting of these exemptions, the facility will operate, to the extent authorized herein, in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission.
- E. EOI shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The plan, which contains Safeguards Information protected under 10 CFR 73.21, is entitled: "Physical Security, Safeguards Contingency and Training & Qualification Plan," and was submitted on October 4, 2004.

EOI shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The EOI CSP was approved by License Amendment No. 234 and supplemented by a change approved by Amendment Nos. 239, 241, and 247.

- F. Except as otherwise provided in the Technical Specifications or the Environmental Protection Plan, EOI shall report any violations of the requirements contained in Section 2.C of this renewed license in the following manner. Initial notification shall be made within 24 hours to the NRC Operations Center via the Emergency Notification System with written follow-up within 30 days in accordance with the procedures described in 10 CFR 50.73(b), (c) and (e).
- G. Entergy Louisiana, LLC shall have and maintain financial protection of such type and in such amounts as the Commission shall require in accordance with Section 170 of the Atomic Energy Act of 1954, as amended, to cover public liability claims.
- H. This renewed license is effective as the date of issuance and shall expire at midnight on December 18, 2044.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Ho K. Nieh, Director
Office of Nuclear Reactor Regulation

Enclosures:

1. (DELETED)
2. Attachment 2
3. Appendix A (Technical Specifications) (NUREG-1117)
4. Appendix B (Environmental Protection Plan)
5. Appendix C (Antitrust Conditions)

Date of Issuance: December 27, 2018