

UNITED STATES **NUCLEAR REGULATORY COMMISSION**

WASHINGTON, D.C. 20555-0001

April 6, 2016

Vice-President, Operations Entergy Nuclear Operations, Inc. James A. FitzPatrick Nuclear Power Plant P.O. Box 110 Lycoming, NY 13093

SUBJECT:

JAMES A. FITZPATRICK NUCLEAR POWER PLANT - ISSUANCE OF

AMENDMENT RE: CYBER SECURITY PLAN IMPLEMENTATION SCHEDULE

(CAC NO. MF6367)

Dear Sir or Madam:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 311 to Renewed Facility Operating License No. DPR-59 for the James A. FitzPatrick Nuclear Power Plant (JAFNPP) in response to your application dated June 22, 2015.

The amendment changes the JAFNPP Cyber Security Plan Implementation Schedule Milestone 8 full implementation date from June 30, 2016, to December 15, 2017.

A copy of the related Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's next biweekly Federal Register notice.

Sincerely,

William C. Huffman, Project Manager

Plant Licensing IV-2 and Decommissioning

Transition Branch

Division of Operating Reactor Licensing

Office of Nuclear Reactor Regulation

Docket No. 50-333

Enclosures:

1. Amendment No. 311 to DPR-59

2. Safety Evaluation

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

ENTERGY NUCLEAR FITZPATRICK, LLC ENTERGY NUCLEAR OPERATIONS, INC. DOCKET NO. 50-333

JAMES A. FITZPATRICK NUCLEAR POWER PLANT

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 311 Renewed Facility Operating License No. DPR-59

- 1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Entergy Nuclear Operations, Inc. (the licensee) dated June 22, 2015, 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 paragraphs 2.C.(2) and 2.D of Facility Operating License No. DPR-59.

Paragraph 2.C.(2) is hereby amended to read as follows:

(2) <u>Technical Specifications</u>

The Technical Specifications contained in Appendix A, as revised through Amendment No. 311, are hereby incorporated in the renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.

Paragraph 2.D is hereby amended, in part, to read as follows:

ENO 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). ENO CSP was approved by License Amendment No. 300, as supplemented by changes approved by License Amendment Nos. 303, 308, and 311.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION

Meena K. Khanna, Chief

Plant Licensing IV-2 and Decommissioning

*ransition Branch

Division of Operating Reactor Licensing Office of Nuclear Reactor Regulation

Attachment:
Changes to the Renewed Facility
Operating License

Date of Issuance: April 6, 2016

ATTACHMENT TO LICENSE AMENDMENT NO. 311 RENEWED FACILITY OPERATING LICENSE NO. DPR-59

DOCKET NO. 50-333

Replace the following pages of the Renewed 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.

<u>REMOVE</u>	<u>INSERT</u>
-3-	-3-
-5-	-5-

- (4) ENO 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 without restriction to chemical or physical form, for sample analysis or instrument calibration; or associated with radioactive apparatus, components or tools.
- (5) Pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.
- C. This renewed operating license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; 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

ENO is authorized to operate the facility at steady state reactor core power levels not in excess of 2536 megawatts (thermal).

(2) <u>Technical Specifications</u>

The Technical Specifications contained in Appendix A, as revised through Amendment No. 311, are hereby incorporated in the renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.

(3) Fire Protection

ENO shall implement and maintain in effect all provisions of the approved fire protections program as described in the Final Safety Analysis Report for the facility and as approved in the SER dated November 20, 1972; the SER Supplement No. 1 dated February 1, 1973; the SER Supplement No. 2 dated October 4, 1974; the SER dated August 1, 1979; the SER Supplement dated October 3, 1980; the SER Supplement dated February 13, 1981; the NRC Letter dated February 24, 1981; Technical Specification Amendments 34 (dated January 31, 1978), 80 (dated May 22, 1984), 134 (dated July 19, 1989), 135 (dated September 5, 1989), 142 (dated October 23, 1989), 164 (dated August 10, 1990), 176 (dated January 16, 1992), 177 (dated February 10, 1992), 186 (dated February 19, 1993), 190 (dated June 29, 1993), 191 (dated July 7, 1993). 206 (dated February 28, 1994), and 214 (dated June 27, 1994); and NRC Exemptions and associated safety evaluations dated April 26, 1983. July 1, 1983, January 11, 1985, April 30, 1986, September 15, 1986 and September 10, 1992 subject to the following provision:

Safeguards Contingency Plan Revision O," submitted by letter dated October 26, 2004, as supplemented by letter dated May 17, 2006.

ENO 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). ENO CSP was approved by License Amendment No. 300, as supplemented by changes approved by License Amendment Nos. 303, 308, and 311.

ENO has been granted Commission authorization to use "stand alone preemption authority" under Section 161A of the Atomic Energy Act, 42 U.S.C. 2201a with respect to the weapons described in Attachment 1, Section II contained in its application submitted by letter dated August 30, 2013, as supplemented by letters dated November 12, 2013, and July 11, 2014. ENO shall fully implement and maintain in effect the provisions of the Commission approved authorization.

E. <u>Power Uprate License Amendment Implementation</u>

The licensee shall complete the following actions as a condition of the approval of the power uprate license amendment.

(1) Recirculation Pump Motor Vibration

Perform monitoring of recirculation pump motor vibration during initial Cycle 13 power ascension for uprated power conditions.

(2) Startup Test Program

The licensee will follow a startup testing program, during Cycle 13 power ascension, as described in GE Licensing Topical Report NEDC-31897P-1, "Generic Guidelines for General Electric Boiling Water Reactor Power Uprate." The startup test program includes system testing of such process control systems as the feedwater flow and main steam pressure control systems. The licensee will collect steady-state operational data during various portions of the power ascension to the higher licensed power level so that predicted equipment performance characteristics can be verified. The licensee will do the startup testing program in accordance with its procedures. The licensee's approach is in conformance with the test guidelines of GE Licensing Topical Report NEDC-31897P-1, "Generic Guidelines for General Electric Boiling Water Reactor Power Uprate," June 1991 (proprietary), GE Licensing Topical Report NED0-31897, "Generic Guidelines for General Electric Boiling Water Reactor Power Uprate," February 1992 (nonproprietary), and NEDC-31897P-AA, Class Ill (proprietary), May 1992.

(3) Human Factors

The licensee will review the results of the Cycle 13 startup test program to determine any potential effects on operator training. Training issues identified



UNITED STATES NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 311

ENTERGY NUCLEAR FITZPATRICK, LLC

AND ENTERGY NUCLEAR OPERATIONS, INC.

DOCKET NO. 50-333

JAMES A. FITZPATRICK NUCLEAR POWER PLANT

TO RENEWED FACILITY OPERATING LICENSE NO. DPR-59

1.0 INTRODUCTION

By letter dated June 22, 2015 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15173A380), Entergy Nuclear Operations, Inc. (Entergy or the licensee), submitted a request for changes to the Renewed Facility Operating License (RFOL) for the James A. FitzPatrick Nuclear Power Plant (JAFNPP).

The U.S. Nuclear Regulatory Commission (NRC) staff initially reviewed and approved the JAFNPP Cyber Security Plan (CSP) implementation schedule by License Amendment No. 300, dated August 19, 2011 (ADAMS Accession No. ML11152A011), concurrent with the incorporation of the CSP into the facility's current licensing basis. Subsequently, the staff reviewed and approved License Amendment No. 308 dated December 1, 2014, which extended the CSP implementation schedule (ADAMS Accession No. ML14202A372). This schedule required JAFNPP to fully implement and maintain all provisions of the CSP no later than June 30, 2016.

The proposed change would revise the completion date of the JAFNPP CSP by extending the date for full implementation from June 30, 2016, to December 15, 2017. The second paragraph of License Condition 2.D of RFOL No. DPR-59 would also be amended. The NRC staff issued a proposed finding that the amendment involves no significant hazards consideration which was published in the *Federal Register* on August 4, 2015 (80 FR 46345). The NRC has not received public comment on this determination.

2.0 REGULATORY EVALUATION

The NRC staff considered the following regulatory requirements and guidance in its review of the current license amendment request to modify the existing CSP implementation schedule:

- Section 73.54 of 10 CFR, which states in part: "Each [CSP] submittal must include a
 proposed implementation schedule. Implementation of the licensee's cyber security
 program must be consistent with the approved schedule."
- The licensee's RFOL, which includes a license condition that requires the licensee to fully implement and maintain in effect all provisions of the Commission-approved CSP.
- NRC memorandum dated October 24, 2013 (ADAMS Accession No. ML13295A467), in which the NRC staff list criteria to consider during evaluations of licensees' requests to postpone their cyber security program implementation date (commonly known as Milestone 8).

The NRC staff does not regard the CSP milestone implementation dates as regulatory commitments that can be changed unilaterally by the licensee, particularly in light of the regulatory requirement at 10 CFR 73.54, that states, "Implementation of the licensee's cyber security program must be consistent with the approved schedule." As the NRC staff explained in its letter to all operating reactor licensees dated May 9, 2011 (ADAMS Accession No. ML110980538), the implementation of the plan, including the key intermediate milestone dates and the full implementation date, shall be in accordance with the implementation schedule submitted by the licensee and approved by the NRC. All subsequent changes to the NRC-approved CSP implementation schedule, thus, will require prior NRC approval as required by 10 CFR 50.90, "Application for amendment of license, construction permit, or early site permit."

3.0 TECHNICAL EVALUATION

3.1 <u>Licensee's Requested Change</u>

The NRC staff approved the current JAFNPP CSP implementation schedule in Amendment No. 308 on December 1, 2014. This amendment approved the licensee's CSP and associated implementation schedule, as discussed in the safety evaluation issued with the amendment. The licensee's implementation schedule was based on a template prepared by the Nuclear Energy Institute (ADAMS Accession No. ML110600218) that the NRC staff found acceptable for licensees to use to develop their CSP implementation schedules. The licensee's proposed implementation schedule for the CSP identified completion dates and bases for the following eight milestones:

- 1) Establish the Cyber Security Assessment Team (CSAT);
- 2) Identify Critical Systems (CSs) and Critical Digital Assets (CDAs);
- Install deterministic one-way devices between lower level devices and higher level devices;
- 4) Implement the security control, "Access Control For Portable And Mobile Devices";

- 5) Implement observation and identification of obvious cyber-related tampering to existing insider mitigation rounds by incorporating the appropriate elements;
- 6) Identify, document, and implement technical cyber security controls in accordance with "Mitigation of Vulnerabilities and Application of Cyber Security Controls" for CDAs that could adversely impact the design function of physical security target set equipment;
- 7) Ongoing monitoring and assessment activities for those target set CDAs whose security controls have been implemented;
- 8) Fully implement the CSP.

Currently, Milestone 8 of the JAFNPP CSP requires the licensee to fully implement the CSP by June 30, 2016. In its application dated June 22, 2015, Entergy proposed to change the Milestone 8 implementation date to December 15, 2017.

The licensee submitted its application on June 22, 2015, using the NRC staff's guidance to evaluate requests to postpone Milestone 8 implementation dates. The licensee's application addressed all the criteria in the guidance. The intent of the staggered cyber security implementation schedule was for licensees to demonstrate ongoing implementation of their cyber security program prior to full implementation, which was scheduled for the date specified in Milestone 8. The licensee completed seven other milestones (Milestone 1 through Milestone 7) by December 31, 2012. Activities included establishing a CSAT, identifying CSs and CDAs, installing deterministic one-way devices between defensive levels, implementing access control for portable and mobile devices, implementing methods to observe and identify obvious cyber-related tampering, and conducting ongoing monitoring and assessment activities for target set CDAs. In their aggregate, the interim milestones demonstrate ongoing implementation of the cyber security program.

The licensee provided the following information pertinent to each of the criteria identified in the NRC guidance memorandum dated October 24, 2013.

- (1) Identification of the specific requirement or requirements of the CSP that the licensee needs additional time to implement.
 - The licensee stated that the following requirements of the CSP require additional time for implementation: Section 3, "Analyzing Digital Computer Systems and Networks," and Section 4, "Establishing, Implementing and Maintaining the Cyber Security Program." The licensee further noted that these sections describe the process for application of cyber security controls and the process of addressing security controls.
- (2) Detailed justification that describes the reason the licensee requires additional time to implement the specific requirement or requirements identified.
 - The licensee stated it had hosted a "pilot" Milestone 8 inspection at the Indian Point Energy Center in March 2014. During the pilot, insight was gained into NRC

perspective on how to apply the cyber security controls listed in NEI 08-09, "Cyber Security Plan for Nuclear Power Reactors," Revision 6 (ADAMS Accession No. ML101180437). During the pilot inspection, the NRC team reviewed several examples of CDAs with Entergy and indicated the level of detail and depth expected for the technical analyses against cyber security controls referenced in NEI 08-09. Based on this review, Entergy stated that the detail and depth of the technical analysis exceeds Entergy's prior understanding and necessitates a greater effort to achieve than initially anticipated.

The licensee stated that during 2015, each operating Entergy licensee had an inspection of compliance with interim Milestones 1 through 7. The preparation for and support of these inspections required a significant commitment of time from Entergy's most knowledgeable subject matter experts on nuclear cyber security, exceeding the estimate previously developed and thereby drawing those resources away from Milestone 8 implementation activities.

(3) A proposed completion date for Milestone 8 consistent with the remaining scope of work to be conducted and the resources available.

The licensee proposed a Milestone 8 completion date of December 15, 2017. As discussed in the licensee's response to criterion (2) above, the proposed completion date for Milestone 8 is primarily based on Entergy's assessment of the pilot inspection. Entergy stated that the remaining work, including the detail and depth of the technical analysis, exceeds the licensee's prior understanding and necessitates a greater effort to achieve than initially anticipated.

(4) An evaluation of the impact that the additional time to implement the requirements will have on the effectiveness of the licensee's overall cyber security program in the context of milestones already completed.

The licensee indicated the impact of the requested additional implementation time on the effectiveness of the overall CSP is considered to be very low, because the milestones already completed have resulted in a high degree of protection of safety-related, important-to-safety, and security CDAs against common threat vectors. Additionally, extensive physical and administrative measures are already in place for CDAs because they are plant components, pursuant to the physical security plan and technical specification requirements. The licensee then provided details about implementation of Milestones 1 through 8.

(5) A description of the licensee's methodology for prioritizing completion of work for CDAs associated with significant safety, security, or emergency preparedness (SSEP) consequences and with reactivity effects in the balance-of-plant (BOP).

The licensee stated because CDAs are plant components, prioritization follows the normal work management process that places the highest priority on apparent conditions adverse to quality in system, structure, and component design function and related factors such as safety risk and nuclear defense-in-depth, as well as threats to continuity of electric power generation in the BOP. High focus continues

to be maintained on prompt attention to any emergent issue with the CDAs that would potentially challenge the established cyber protective barriers. Additionally, it should be noted that these CDAs encompass those associated with physical security target sets.

(6) A discussion of the licensee's cyber security program performance up to the date of the license amendment request.

The licensee stated that a compromise of an SSEP function by cyber means has not been identified. It also noted a formal quality assurance (QA) audit in the last quarter of 2014, which included a review of the cyber security program implementation and no significant findings were found related to cyber security program performance and effectiveness.

(7) A discussion of cyber security issues pending in the licensee's corrective action program (CAP).

The licensee stated there are presently no significant (constituting a threat to a CDA via cyber means or calling into question program effectiveness) nuclear cyber security issues pending in the JAFNPP CAP. However, several non-significant issues identified during the QA audit described above and identified during NRC inspections have been entered into the CAP.

(8) A discussion of modifications completed to support the cyber security program and a discussion of pending cyber security modifications.

The licensee provided a discussion of completed modifications and pending modifications.

3.2 NRC Staff Evaluation

The NRC staff has evaluated the licensee's application using the regulatory requirements and guidance above. The NRC's staff's evaluation is below. The NRC staff finds that the actions the licensee noted as being required to implement from the CSP, Section 3, "Analyzing Digital Computer Systems and Networks," and Section 4, "Establishing, Implementing and Maintaining the Cyber Security Program," are reasonable as discussed below.

The licensee indicated that the activities described in Milestones 1 through 7 were completed prior to December 31, 2012, and provide a high degree of protection of safety-related, important-to-safety, and security CDAs against common threat vectors. The NRC staff concludes that the licensee's site is more secure after the implementation of Milestones 1 through 7 because the activities the licensee has completed mitigate the most significant cyber attack vectors for the most significant CDAs. Therefore, the NRC has reasonable assurance that full implementation of the CSP by December 15, 2017, will provide adequate protection of the public health and safety and the common defense and security.

The licensee stated that the detail and depth of the technical analysis exceeds Entergy's prior understanding and necessitates a greater effort to achieve than Entergy anticipated when the

current implementation schedule was developed. The NRC staff recognizes that CDA assessment work, including application of controls, is more complex and resource intensive than Entergy anticipated. As a result, the licensee has a large number of additional tasks not considered when developing its current CSP implementation schedule. The NRC staff concludes that the licensee's request for additional time to implement Milestone 8 is reasonable, given the complexity, volume, and scope of the remaining work required to fully implement its CSP.

The licensee proposed a Milestone 8 completion date of December 15, 2017. The licensee prioritization of completion of work for CDAs follows the normal work management process that places the highest priority on apparent conditions adverse to quality in system, structure, and component design function and relates to factors such as safety risk and nuclear defense-in-depth. High focus continues to be maintained on prompt attention to any emergent issue with safety-related, security and important to safety (including BOP) CDAs that would potentially challenge the established cyber protective barriers. The NRC staff concludes that the licensee's methodology for prioritizing work on CDAs is appropriate. The staff further concludes that the licensee's request to delay final implementation of the CSP until December 15, 2017, is reasonable, given the complexity of the remaining work and the licensee's resource constraints.

3.3 Revision to License Condition

By letter dated June 22, 2015, the licensee proposed to modify paragraph 2.D of RFOL No. DPR-59, which provides a license condition to require the licensee to fully implement and maintain in effect all provisions of the NRC-approved CSP.

The second paragraph of the license condition in paragraph 2.D. of RFOL No. DPR-59 for JAFNPP is modified as follows:

ENO [Entergy] shall fully implement and maintain in effect all provisions of the Commissioned-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). ENO CSP was approved by License Amendment No. 300, as supplemented by changes approved by License Amendment Nos. 303, 308, and 311.

3.4 Technical Evaluation Conclusion

Based on its review of the licensee's submissions, the NRC staff concludes that the licensee's request to delay full implementation of its CSP until December 15, 2017, is reasonable for the following reasons: (i) the licensee's implementation of Milestones 1 through 7 provides mitigation for significant cyber attack vectors for the most significant CDAs; (ii) the scope of the work required to come into full compliance with the CSP implementation schedule was more complicated than the licensee anticipated when the current CSP implementation schedule was developed; and (iii) the licensee has reasonably prioritized and scheduled the work required to come into full compliance with its CSP implementation schedule. Therefore, the NRC staff finds the proposed change acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the New York State official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

This is an amendment of a 10 CFR Part 50 license that relates solely to safeguards matters and does not involve any significant construction impacts. This amendment is an administrative change to extend the date by which the licensee must have its cyber security plan fully implemented. 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 which was published in the *Federal Register* on August 4, 2015 (80 FR 46345). Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(12). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this 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) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: John Rycyna, NSIR

Date: April 6, 2016

Vice-President, Operations Entergy Nuclear Operations, Inc. James A. FitzPatrick Nuclear Power Plant P.O. Box 110 Lycoming, NY 13093

SUBJECT:

JAMES A. FITZPATRICK NUCLEAR POWER PLANT - ISSUANCE OF

AMENDMENT RE: CYBER SECURITY PLAN IMPLEMENTATION SCHEDULE

(CAC NO. MF6367)

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Sincerely,

/RA/

William C. Huffman, Project Manager Plant Licensing IV-2 and Decommissioning Transition Branch Division of Operating Reactor Licensing Office of Nuclear Reactor Regulation

Docket No. 50-333

Enclosures:

1. Amendment No. 311 to DPR-59

2. Safety Evaluation

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