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

February 28, 2022

Mr. David P. Rhoades
Senior Vice President
Constellation Energy Generation, LLC
President and Chief Nuclear Officer
Constellation Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: JAMES A. FITZPATRICK NUCLEAR POWER PLANT – ISSUANCE OF AMENDMENT NO. 348 RE: REVISING SURVEILLANCE REQUIREMENT 3.5.1.6 INVOLVING RECIRCULATION PUMP DISCHARGE VALVES (EPID L-2020-LLA-0269)

Dear Mr. Rhoades:

The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment No. 348 to Renewed Facility Operating License No. DPR-59 for the James A. FitzPatrick Nuclear Power Plant. The amendment consists of changes to the technical specifications in response to your application dated December 11, 2020, as supplemented by letters dated February 18, 2021, and August 9, 2021.

The amendment revises Technical Specification Limiting Conditions for Operation 3.5.1 "ECCS [Emergency Core Cooling System] – Operating," Surveillance Requirement (SR) 3.5.1.6. Specifically, the amendment revises the Frequency of SR 3.5.1.6 from "Once each startup prior to exceeding 25% RTP [rated thermal power]," to 24 months, and deletes the associated SR Note that states, "Not required to be performed if performed within the previous 31 days."

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

Sincerely,

/RA/

Justin C. Poole, Project Manager
Plant Licensing Branch I
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-333

Enclosures:
1. Amendment No. 348 to DPR-59
2. Safety Evaluation

cc: Listserv

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

CONSTELLATION FITZPATRICK, LLC

AND

CONSTELLATION ENERGY GENERATION, LLC

DOCKET NO. 50-333

JAMES A. FITZPATRICK NUCLEAR POWER PLANT

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 348
Renewed Facility Operating License No. DPR-59

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Exelon Generation Company, LLC (on February 1, 2022, Exelon Generation Company, LLC was renamed Constellation Energy Generation, LLC (the licensee)), dated December 11, 2020, as supplemented by letters dated February 18, 2021, and August 9, 2021, 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 Renewed Facility Operating License No. DPR-59 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 348, are hereby incorporated in the renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 90 days.

FOR THE NUCLEAR REGULATORY COMMISSION

James G. Danna

Digitally signed by James G. Danna
Date: 2022.02.28 10:42:01 -05'00'

James G. Danna, Chief
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Renewed Facility Operating License and Technical Specifications

Date of Issuance: February 28, 2022

ATTACHMENT TO LICENSE AMENDMENT NO. 348

JAMES A. FITZPATRICK NUCLEAR POWER PLANT

RENEWED FACILITY OPERATING LICENSE NO. DPR-59

DOCKET NO. 50-333

Replace the following page of the License with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

Remove Page	Insert Page
Page 3	Page 3

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

Remove Page	Insert Page
3.5.1-5	3.5.1-5

(3) Constellation Energy Generation, LLC, 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;

(4) Constellation Energy Generation, LLC, 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) Constellation Energy Generation, LLC, 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

Constellation Energy Generation, LLC is authorized to operate the facility at steady state reactor core power levels not in excess of 2536 megawatts (thermal).

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 348, are hereby incorporated in the renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.5.1.6	Verify each recirculation pump discharge valve cycles through one complete cycle of full travel or is de-energized in the closed position.	24 months
SR 3.5.1.7	Verify the following ECCS pumps develop the specified flow rate against a system head corresponding to the specified reactor pressure above primary containment pressure. SYSTEM / FLOW RATE / NO. OF PUMPS / SYSTEM HEAD CORRESPONDING TO A REACTOR PRESSURE ABOVE PRIMARY CONTAINMENT PRESSURE OF Core Spray: ≥ 4265 gpm; 1; ≥ 113 psi LPCI: ≥ 7700 gpm; 1; ≥ 20 psi	In accordance with the INSERVICE TESTING PROGRAM
SR 3.5.1.8	----------NOTE---------- Not required to be performed until 12 hours after reactor steam pressure and flow are adequate to perform the test. ---------- Verify, with reactor pressure ≤ 1040 psig and ≥ 970 psig, the HPCI pump can develop a flow rate ≥ 3400 gpm against a system head corresponding to reactor pressure.	In accordance with the INSERVICE TESTING PROGRAM

(continued)

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 348

CONSTELLATION FITZPATRICK, LLC

CONSTELLATION ENERGY GENERATION, LLC

DOCKET NO. 50-333

JAMES A. FITZPATRICK NUCLEAR POWER PLANT

TO RENEWED FACILITY OPERATING LICENSE NO. DPR-59

1.0 INTRODUCTION

By letter dated December 11, 2020, as supplemented by letters dated February 18, 2021, and August 9, 2021 (Agencywide Documents Access and Management System (ADAMS) Accession Nos. ML20346A023, ML21049A213 and ML21221A058, respectively), Exelon Generation Company, LLC submitted a request for changes to the James A. FitzPatrick Nuclear Power Plant (FitzPatrick) Technical Specifications (TSs). On February 1, 2022 (ADAMS Accession No. ML22032A333), Exelon Generation Company, LLC was renamed Constellation Energy Generation, LLC (Constellation, the licensee). The proposed changes would modify technical specification (TS) 3.5.1, "ECCS [Emergency Core Cooling System] – Operating," Surveillance Requirements. Specifically, the amendment would revise the frequency of surveillance requirement (SR) 3.5.1.6.

The supplement dated August 9, 2021, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the NRC staff's original proposed no significant hazards consideration determination.

2.0 REGULATORY EVALUATION

2.1 System Description

The Reactor Recirculation System (RRS) provides coolant flow through the core. The RRS consists of two recirculation loops external to the reactor vessel which provide the piping path for the driving flow of water to the reactor vessel jet pumps. Each external loop contains one variable speed, motor driven recirculation pump and two motor operated gate valves. One of the functions of the motor operated gate valves is to ensure that failure of piping integrity does not compromise the ability of the reactor vessel internals to provide a re-floodable volume. This is accomplished by closing the valves on demand in response to failure of piping integrity.

2.2 Licensee Proposed TS Changes

The current SR 3.5.1.6 states "Verify each recirculation pump discharge valve cycles through one complete cycle of full travel or is de-energized in the closed position." The frequency for the SR is "Once each startup prior to exceeding 25% RTP." The SR contains a NOTE which states "Not required to be performed if performed within the previous 31 days."

The proposed amendment would revise the Frequency of SR 3.5.1.6 from "Once each startup prior to exceeding 25% RTP," to 24 months, and delete the associated SR NOTE that states, "Not required to be performed if performed within the previous 31 days."

2.3 Regulatory Requirements

Section 182a of the Atomic Energy Act (Act) requires applicants for nuclear power plant operating licenses to include TSs as part of the license. These TSs are derived from the plant safety analyses.

In Section 50.36, "Technical specifications," of Title 10 of the *Code of Federal Regulations* (10 CFR), the NRC established its regulatory requirements related to the content of TSs. Pursuant to 10 CFR 50.36, TSs are required to include items in the following five specific categories related to station operation: (1) safety limits, limiting safety system settings, and limiting control settings; (2) limiting conditions for operation (LCOs); (3) surveillance requirements; (4) design features; and (5) administrative controls. The rule does not specify the particular requirements to be included in a plant's TSs.

The regulation in 10 CFR 50.36(b) requires:

> Each license authorizing operation of a …utilization facility …will include technical specifications. The technical specifications will be derived from the analyses and evaluation included in the safety analysis report, and amendments thereto, submitted pursuant to [10 CFR] 50.34 ["Contents of applications; technical information"]. The Commission may include such additional technical specifications as the Commission finds appropriate.

The regulation in 10 CFR 50.36(c)(2)(i) states, in part that:

> Limiting conditions for operation are the lowest functional capability or performance levels of equipment required for safe operation of the facility. When a limiting condition for operation of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the technical specifications until the condition can be met.

The regulation in 10 CFR 50.36(c)(2) states:

> Surveillance requirements are requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met.

The FitzPatrick TS 1.3, "Completion Times" establishes the completion times convention and provides guidance for its use. Similarly, TS 1.4, "Frequency" defines the proper use and

application of Frequency requirements. Usage rules for LCOs are in TS Section 3.0, "3.0 LIMITING CONDITION FOR OPERATION (LCO) APPLICABILITY." Per LCO 3.0.2, "Upon discovery of a failure to meet an LCO, the Required Actions of the associated Conditions shall be met…" Usage rules for SRs in TS Section 3.0, "SURVEILLANCE REQUIREMENT (SR) APPLICABILITY" dictate the requirements for SRs.

Per FitzPatrick SR 3.0.1:

> Failure to meet a Surveillance, whether such failure is experienced during the performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the LCO. Failure to perform the SR within the specified Frequency shall be failure to meet the LCO except as provided in SR 3.0.3.

Per FitzPatrick SR 3.0.2:

> The specified Frequency for each SR is met if the Surveillance is performed within 1.25 times the interval specified in the Frequency, as measured from the previous performance or as measured from the time a specified condition of the Frequency is met.
>
> For Frequencies specified as "once," the above interval extension does not apply.
>
> If a Completion Time requires periodic performance on a "once per . . ." basis, the above Frequency extension applies to each performance after the initial performance.
>
> Exceptions to this Specification are stated in the individual Specifications.

While the FitzPatrick TS Sections 1.0 and 3.0 are not regulations, they constitute license requirements imposed on plant operation.

The regulation in 10 CFR 50.55a(f)(4), "Inservice testing standards requirement for operating plants," states, in part:

> Throughout the service life of a boiling or pressurized water-cooled nuclear power facility, pumps and valves that are within the scope of the ASME OM Code must meet the inservice testing [IST] requirements (except design and access provisions) set forth in the ASME OM Code and addenda that become effective subsequent to editions and addenda specified in [10 CFR 50.55a](f)(2) and (3) and that are incorporated by reference in [10 CFR 50.55a](a)(1)(iv), to the extent practical within the limitations of design, geometry, and materials of construction of the components….

ASME OM Code, Subsection ISTC, "Inservice Testing of Valves in LWR Nuclear Plants," paragraph ISTC-3521 provides exercising requirements of valves.

2.4 Regulatory Guidance

The NRC staff's guidance for the review of TSs is in Chapter 16.0, "Technical Specifications," of NUREG-0800, Revision 3, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants, LWR [Light-Water Reactor] Edition" (SRP), March 2010 (ADAMS Accession No. ML100351425). As described therein, as part of the regulatory standardization effort, the NRC staff has prepared Standard Technical Specifications (STS) for each of the LWR

nuclear designs. Accordingly, the NRC staff's review includes consideration of whether the proposed changes are consistent with the applicable reference STS (i.e., the current STS), as modified by NRC-approved travelers. The NRC used U.S. Nuclear Regulatory Commission, "Standard Technical Specifications, General Electric BWR/4 Plants," NUREG-1433, Volume 1, "Specifications," and Volume 2, "Bases," Revision 4.0, April 2012 (ADAMS Accession Nos. ML12104A192 and ML12104A193, respectively). Consistent with NUREG-0800, special attention is given to TS provisions that depart from the reference NUREG-1433 where the differences from the STS can be justified by other considerations so that 10 CFR 50.36 is met.

Licensees may propose revisions to the TSs. The NRC staff reviews proposed changes and will generally issue changes provided that the plant-specific review supports a finding of continued adequate protection of public health and safety because: (1) the change is editorial, administrative, or provides clarification (i.e., no requirements are materially altered), (2) the change is more restrictive than the licensee's current requirement, or (3) the change is less restrictive than the licensee's current requirement, but nonetheless still affords adequate assurance of safety when judged against current regulatory standards. The detailed application of this general framework, and additional specialized guidance, is discussed in Section 3.0 of this safety evaluation in the context of the proposed TS changes contained in the licensee's license amendment request (LAR).

3.0 TECHNICAL EVALUATION

The NRC staff evaluated the proposed change to determine whether the SR, as modified by the proposed changes, will continue to meet the regulatory requirements of 10 CFR 50.36(c)(3). The NRC staff evaluation also included a consideration of whether the proposed changes are consistent with NUREG-1433.

3.1 Deletion of NOTE

The licensee proposed deletion of the NOTE stating performance of the SR is not required if the SR had been performed within the previous 31 days. The licensee justified deletion of the NOTE in part by stating it would "eliminate the wear and tear of the valves" due to "unnecessary midcycle testing." The licensee also stated the NOTE could delay restart of the unit from a midcycle outage.

The NRC staff determined the proposed deletion of the NOTE is less restrictive than the current requirement because for any case where the licensee is required to shutdown more than 31 days after the SR had been met, the current SR would be required to be performed. If the NOTE is removed, performance of the SR would only be required at the specified proposed frequency of 24 months. The NRC staff also determined the proposed deletion is not consistent with NUREG-1433.

The recirculation pump discharge valves referenced in SR 3.5.1.6 are 02-2MOV-053A and 053B and are included in the current Fitzpatrick Fifth 10-year IST Program. The FitzPatrick Fifth 10-year IST Program is based on ASME OM Code 2004 Edition thru 2006 Addenda (ADAMS Accession No. ML18218A533). These valves are required to be exercised nominally once every 3 months. However, the IST program provides Code Shutdowns Justification (CSJ)-1 for valves 02- 2MOV-053A and 053B and states that "these valves will be stroke time tested during cold shutdown when Reactor Water Recirculation Pumps can be secured in accordance with ISTC- 3521(f) and (g)." Therefore, these valves are full stroke exercised at least once every

refueling outage, which is every 24 months. The Code does allow a 6-month grace period beyond the 24 months to allow for unexpected changes in refuel schedule.

The licensee provided valve test history data as part of the justification for the proposed change. The NRC staff reviewed the data and concluded the valves also have demonstrated sufficient reliability to preclude the need for mid cycle testing. Therefore, the NRC staff found the proposed deletion of the NOTE acceptable because the SR would continue to meet 50.36 and the difference from NUREG-1433 is justified by the consideration of valve reliability.

3.2 Frequency Change

The NRC staff evaluated the proposed change of the SR Frequency from "Once each startup prior to exceeding 25% RTP" to "24 months." The NRC staff noted the proposed frequency is not consistent with NUREG-1433. The staff reviewed the licensee's justification for the proposed change in the LAR, the LAR supplement and the RAI responses.

In Section 2.0 of the LAR the licensee stated:

> JAF [FitzPatrick] operates on a 24-month refueling cycle. With the current TS, if the plant operates in Mode 1 for the entire operating cycle, the period between performances of this SR would be approximately 24 months.

On page 2 of the supplement the licensee stated "…no valve will exceed a 24-month frequency."

The current frequency does not qualify for the interval extension of SR 3.0.2 because the current frequency is stated as "once…" The NRC staff determined that the proposed frequency would qualify for the SR 3.0.2 extension because there is no proposed exception to SR 3.0.2.

The NRC staff evaluated the change of frequency from an events-based frequency to a time-based frequency. The NRC staff determined that since SR 3.0.2 would be applicable to the SR, time between tests could exceed 24 months in some circumstances. The NRC staff evaluated the case of potential intervals exceeding 24 months.

Recalling the demonstrated reliability of the valves as discussed in Section 3.1 above, the NRC staff determined the SR 3.0.2 extension should not significantly degrade the reliability that results from performing the SR at its specified Frequency. This is based on the recognition that, given the reliability of the valves, the most likely result when the SR is being performed is that the SR will pass.

The NRC staff also noted that both the bases for FitzPatrick SR 3.0.2 and the STS Bases for SR 3.0.2 account for the fact that SR 3.0.2 extensions may be needed for SR intervals based on refueling intervals. This is also in alignment with the current IST exercise testing requirements, as discussed in Section 3.1 of this evaluation. Any future requested changes to the current IST exercise testing (e.g., alternative request to extend test interval beyond 24 months for some unknown reason) must address whether the future proposed change maintains alignment with TS requirements.

The NRC staff further determined such an extension would need to conform with SR usage rules, and all other SR and LCO usage rules would remain unchanged. Per SR 3.0.1, failure to meet a SR, whether such failure is experienced during the performance of the SR or between

performances of the Surveillance (emphasis added), shall be failure to meet the LCO. Consequently, if information becomes available between tests which leads to a conclusion the SR is not met, the licensee would be required to declare the associated LCO not met.

Based on the determinations above, NRC staff determined the SR, as amended by the proposed changes will continue to meet 10 CFR 50.36(c)(3) because the SRs will still provide assurance that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met. The NRC staff also determined the difference from NUREG-1433 is justified by the consideration of valve reliability and continued requirements provided in FitzPartrick TS usage rules.

3.3 Technical Conclusion

Based on the information provided by the licensee and the analysis in Section 3.0 of this safety evaluation, the NRC staff concludes that while the licensee's proposed TS changes are less restrictive than the licensee's current TS requirements, the proposed changes still provide adequate assurance of safety when judged against current regulatory standards. The licensee's TS, as amended by the proposed changes will continue to comply with 10 CFR 50.36 TS requirements. Therefore, the changes to SR 3.5.1.6 are 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 on December 29, 2021. 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 and changes surveillance requirements. 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 (March 23, 2021; 86 FR 15505). 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) 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 Contributors: M. Hamm
B. Gurjendra

Date: February 28, 2022

SUBJECT: JAMES A. FITZPATRICK NUCLEAR POWER PLANT – ISSUANCE OF AMENDMENT NO. 348 RE: REVISING SURVEILLANCE REQUIREMENT 3.5.1.6 INVOLVING RECIRCULATION PUMP DISCHARGE VALVES (EPID L-2020-LLA-0269) DATED FEBRUARY 28, 2022

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