



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION I
475 ALLENDALE RD, STE 102
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

September 26, 2024

EA-24-113

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

**SUBJECT: NOTICE OF ENFORCEMENT DISCRETION FOR JAMES A. FITZPATRICK
NUCLEAR POWER PLANT (EPID: L-2024-LLD-0005)**

Dear David Rhoades:

By letter (Agencywide Documents Access and Management System (ADAMS) Accession No. ML24269A019) dated September 25, 2024, James A. FitzPatrick Nuclear Power Plant (Constellation, the licensee) requested the U.S. Nuclear Regulatory Commission (NRC) exercise discretion to not enforce compliance with the actions required by James A. FitzPatrick Nuclear Power Plant (FitzPatrick) Technical Specification (TS) Limiting Condition for Operation (LCO) 3.3.2.1 – “Control Rod Block Instrumentation.”

This letter documents information previously discussed with the NRC in a telephone conference held on September 23, 2024, at 7:00 p.m. Eastern Standard Time (EST). The principal NRC staff members who participated in the telephone conference are listed in Enclosure 1. The NRC staff determined that the information contained in your letter requesting the Notice of Enforcement Discretion (NOED) was consistent with your oral request.

The NRC first became aware of the potential for this NOED request on September 23, 2024, at approximately 2:00 p.m. EST through communication with the FitzPatrick Project Manager. The licensee requested that a NOED be granted pursuant to the NRC’s policy regarding exercise of discretion for an operating power reactor, set out in the NRC Enforcement Manual, Appendix F, “Notices of Enforcement Discretion,” and the NOED be effective for one additional reactor startup with the rod worth minimizer (RWM) inoperable during the calendar year of 2024. The reactor startup following the SCRAM was scheduled to commence at 1:45 a.m. EST on September 24, 2024. This letter documents the event and our telephone conversation on September 23, 2024, when we orally granted this NOED request.

On September 23, 2024, at approximately 7:22 a.m. EST, FitzPatrick experienced a reactor SCRAM due to a turbine control valve closure following an apparent grid disturbance. FitzPatrick operator and plant response to the SCRAM was without complication. FitzPatrick had declared the RWM INOPERABLE during reactor startup following a refueling outage

at 10:54 p.m. EST on September 17, 2024. The RWM had been declared inoperable and bypassed due to receiving multiple unexpected rod blocks and program abort signals. TS LCO 3.3.2.1 Condition C restricts plant startup to once per calendar year without restoring the RWM system to operable. FitzPatrick performed a review of the RWM program logs and identified that the rod block problems that occurred during the September 17, 2024, reactor startup were being caused by selection and attempted rod movement when the automatic full rod scan was in progress. FitzPatrick implemented a procedure revision to ensure there is sufficient time for the RWM to perform background activities between rod movements without introducing any logic errors. The procedure revision does not eliminate the condition that resulted in the RWM being declared inoperable but provides the operators an ability to manage the condition and allow continued rod movement until a design change is implemented. Additionally, FitzPatrick will take the compensatory measure to dedicate an independent third-party review of the rod pull sheets. This will add additional defense in depth to increase the likelihood of successful operator actions. The licensee determined that the design change to correct the condition would not be implemented to address Condition C of TS LCO 3.3.2.1 and initiated the NOED process with the NRC.

During the teleconference held on September 23, 2024, the licensee requested enforcement discretion for FitzPatrick to be able to perform a reactor startup following the SCRAM on September 23, 2024, with the RWM inoperable.

Based on the NRC staff's evaluation of the licensee's request, the staff determined that granting this NOED was consistent with the NRC's Enforcement Policy and staff guidance. The NOED request met the criteria specified in NRC's Enforcement Manual, Appendix F, "Notices of Enforcement Discretion," Sections 2.2 and 2.5. Specifically, the NRC determined that it was appropriate to exercise discretion for the one additional reactor startup for the calendar year of 2024 and avoid an unnecessary shutdown of a reactor without a corresponding benefit to public health and safety or the environment. Therefore, as communicated orally to the licensee at approximately 9:45 p.m. EST on September 23, 2024, the NRC exercised discretion to not enforce compliance with TS LCO 3.3.2.1. for one additional reactor startup in calendar year 2024, between September 23, 2024 and September 25, 2024.

FitzPatrick commenced reactor startup at 1:45 a.m. EST on September 24, 2024, with the RWM operable and enhanced procedural guidance in place. Reactor startup with the RWM operable continued up to and beyond 10% reactor power, which is beyond the point where the RWM is required to be operable. FitzPatrick remained compliant with TS LCO 3.3.2.1 and the requested and subsequently approved NOED was not utilized.

As stated in the NRC Enforcement Policy, enforcement action may be taken to the extent that violations were involved for the root cause that led to the noncompliance for which this NOED was necessary.

This letter and its enclosures will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

Blake D. Welling, Director
Division of Operating Reactor Safety

Docket No. 05000333

License No. DPR-59

Enclosures:

1. List of Key NRC Personnel
2. FitzPatrick Notice of
Enforcement Request (ML24269A019)

cc w/encls: Distribution via ListServ

SUBJECT: NOTICE OF ENFORCEMENT DISCRETION FOR JAMES A. FITZPATRICK
NUCLEAR POWER PLANT (EPID: L-2024-LLD-005) DATED
SEPTEMBER 26, 2024

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DOCUMENT NAME: https://usnrc.sharepoint.com/teams/Region-I-Branch-1/Shared Documents/FitzPatrick/NOED_9-23-24.docx

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OFFICE	RI/DORS	NRR/DORL	NRR/DORL	RI/DORS	
NAME	E. Carfang	J. Kim	J. Pelton	B. Welling	
DATE	9/26/24	9/26/24	9/26/24	9/26/24	

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LIST OF KEY NRC PERSONNEL

NRC REGION I

B. Welling, Director, Division of Operating Reactor Safety (DORS)
R. McKinley, Deputy Director, DORS
E. Carfang, Branch Chief, DORS, Projects Branch 1
E. Miller, FitzPatrick Senior Resident Inspector, DORS, Projects Branch 1
V. Fisher, FitzPatrick Resident Inspector, DORS, Projects Branch 1
M. Hardgrove, Senior Project Engineer, DORS, Technical Support and Administrative Team
D. Werkheiser, Senior Reactor Analyst, DORS

Office of Nuclear Reactor Regulation

A. Rivera-Varona, Deputy Director, Division of Operating Reactor Licensing (DORL)
H. Gonzalez, Branch Chief, DORL, Plant Licensing Branch 1
E. Miller, Senior Project Manager, DORL, Plant Licensing Branch II-1
J. Kim, FitzPatrick Project Manager, DORL, Plant Licensing Branch 1
R. Lantigua, Project Manager, DORL, Plant Licensing Branch 1
B. Wetzel, Project Manager, DORL, Plant Licensing Branch 3
K. Bucholtz, Reliability and Risk Analyst, Division of Risk Assessment, PRA Oversight Branch
T. Sweat, Reactor Systems Engineer, Division of Safety Systems, Technical Specifications Branch
J. Ambrosini, Nuclear Engineer, Division of Safety Systems, Nuclear Systems Performance Branch



JAFP-24-0046

September 25, 2024

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

James A. FitzPatrick Nuclear Power Plant
Renewed Facility Operating License No. DPR-59
NRC Docket No. 50-333

Subject: Request for Enforcement Discretion for Technical Specification (TS) 3.3.2.1 Control Rod Block Instrumentation

On September 23, 2024, Constellation Energy Corporation, LLC (CEG) verbally requested, via telephone call, a Notice of Enforcement Discretion (NOED) associated with Technical Specification (TS) 3.3.2.1 Control Rod Block Instrumentation for James A. FitzPatrick Nuclear Power Plant (JAF). The following information was discussed with representatives of the NRC on September 23, 2024, at 1900 hours, with subsequent approval being verbally granted by the NRC at 2145 hours.

At 22:54 ET on September 17, 2024, JAF entered Condition C of TS 3.3.2.1 for an inoperable RWM. The RWM had been declared inoperable and bypassed due to receiving multiple unexpected rod blocks and program abort signals. Condition C restricts plant startup to once per calendar year without restoring the RWM system to operable. JAF conducted a plant startup from a planned refueling outage with the RWM inoperable on September 17, 2024. On September 23, 2024, at 07:22 ET JAF experienced an automatic SCRAM as a result of a main turbine trip due to an automatic trip of the generator output breakers. At the time of the call, the unit was in MODE 3 (ENS #57333).

Since the call and subsequent NOED approval and prior to commencing rod moves, JAF performed a review of the RWM program logs and identified that the rod block problems that occurred during the September 17 Startup were being caused by selection and attempted rod movement when the automatic full rod scan was in progress. As discussed on the call, a design change is necessary to permanently correct the known RWM problems. However, this additional understanding allowed the station to implement a procedure revision to ensure there is sufficient time for the RWM to perform background activities between rod movements without introducing any logic errors. This procedure revision does not eliminate the condition that resulted in the RWM being declared inoperable but provides the operators a tool to manage the condition and allow continued rod movement until the design change is implemented.

With the NOED approved and enhanced procedural guidance in place, the station commenced Reactor startup at 01:45 ET on September 24, 2024, with the RWM operable. Startup with the RWM operable continued up to and beyond 10% reactor power which is beyond the point where the RWM is required to be operable. As of 15:30 ET on September 24, 2024, JAF Reactor Power is greater than 17% and the RWM remains operable and in service. As such, JAF remains compliant with TS 3.3.2.1 and the requested and subsequently approved NOED was not utilized.

During the NOED request telephone call, JAF communicated the intention to submit an emergency License Amendment Request to allow subsequent Startups with the RWM inoperable. Although not

required during the current startup, the permanent design change that was communicated during the NOED call has not been implemented and JAF may still be vulnerable to RWM failures. Accordingly, JAF will submit the discussed License Amendment Request however the request will not be submitted under Emergency Circumstances but is being requested for an expedited review.

The attached enclosure is a summary of the information provided during the call necessary for approval of the requested enforcement discretion. The enclosure has been reviewed and approved by the JAF Plant Operations Review Committee in accordance with the requirements of the CEG Quality Assurance Program. There are no regulatory commitments contained within this letter.

Should you have any questions or comments regarding this matter, please contact Chelsea Troutman at (607)-742-9310.

Respectfully,

A handwritten signature in dark ink, appearing to read "Garrick Olson", written over a horizontal line.

Garrick Olson
Plant Manager, James A. FitzPatrick Clean Energy Center

Enclosure: Request for Enforcement Discretion for Technical Specification (TS) 3.3.2.1 Control Rod Block Instrumentation

cc: Regional Administrator - NRC Region I
NRC Senior Resident Inspector – JAF
NRC Project Manager - NRR – JAF

ENCLOSURE

James A. FitzPatrick Nuclear Power Plant

Docket No. 50-333

Renewed Facility Operating License No. DPR-59

**Request for Enforcement Discretion for
Technical Specification (TS) 3.3.2.1 "Control Rod Block Instrumentation"**

Request for Enforcement Discretion for
Technical Specification (TS) 3.3.2.1 Control Rod Block Instrumentation

- 1. Explain why a formal licensing process is not appropriate to address the issue and why the need for a NOED could not have reasonably been avoided. If applicable, this explanation shall address previous instances of the issue and decisions to pursue licensing solutions in the past.**

During James A. FitzPatrick (JAF) start up post J1R26 at 22:54 on September 17, 2024, JAF entered Condition C of TS 3.3.2.1 for an inoperable RWM. Condition C restricts plant startup to once per calendar year without restoring the RWM system to operable. JAF conducted a plant startup from a planned refueling outage with the RWM inoperable on September 17, 2024. JAF achieved 100% power by 2300 on September 19, 2024. JAF had plans to further diagnose, troubleshoot, and fix inoperable RWM system post outage completion. On September 23, 2024, at 07:22 JAF experienced an automatic SCRAM as a result of a main turbine trip due to an automatic trip of the generator output breakers and the unit is currently in MODE 3 (ENS #57333). The cause of the automatic trip was apparent, and station was able to quickly turnaround the unit to start up with a limited number of items on the forced outage plan due to recently completed refueling outage. Currently, the forced outage plan does not require cold shutdown.

Given that there was limited time between the unit start up from J1R26 refueling outage when the issue was detected to when the unit experienced an unexpected automatic SCRAM, the station was not able to complete troubleshooting and repairs for the issue identified on September 17, 2024.

As a result, JAF is requesting enforcement discretion for Technical Specification (TS) 3.3.2.1 Control Rod Block Instrumentation. JAF has evaluated the enforcement discretion request against the criteria in NRC Enforcement Manual, Appendix F. This NOED is being requested in accordance with Appendix F "Notices of Enforcement Discretion" of the NRC Enforcement Manual. The applicable criterion involves the following condition: "Potentially unnecessary delays in plant startup without a corresponding health and safety benefit." The determination of this criterion's applicability is based on the timeline for startup from the forced outage and knowing that previous issues with RWM have not yet been corrected.

Previous issues with the Rod Worth Minimizer have been individually identified and corrected. However, the issue identified on September 17, 2024, had not been previously experienced.

- 2. Provide a description of the TS or other license conditions that will be violated. This description shall include the time the condition was entered and when the completion time will expire.**

JAF requests enforcement discretion from certain requirements of TS 3.3.2.1 Control Rod Block Instrumentation. TS Condition C.2.1.2 requires an operable rod worth minimizer in Modes 1 and 2 while less than 10% RTP and permits only one startup per calendar year with the rod worth minimizer inoperable.

If the RWM is not restored to operable status, 3.3.2.1.C must be entered, requiring the following, verification that greater than twelve control rods are withdrawn OR verification by administrative methods that a reactor startup with RWM inoperable has not been performed in the current calendar year AND movement of control rods is within compliance with banked

position withdrawal sequence by a second licensed operator or other qualified member of the technical staff.

Constellation is requesting an allowance to permit a plant startup on September 24, 2024, with the rod worth minimizer inoperable, while observing remaining constraints of 3.2.2.1 This request will prevent unnecessary delays in plant startup without a corresponding health and safety benefit as the result of compliance with TS 3.3.2.1 Control Rod Block Instrumentation, Required Action C.2.1.2.

3. Provide sufficient information to demonstrate that the cause of the situation is well understood including extent of condition on other related SSCs (e.g., common cause).

Currently, there is a software error in which the Rod Worth Minimizer is being forced to an inoperable state because of a timing issue with a Full Core Rod Scan that is resulting from an observed Rod Drift condition during rod movement. JAF is working with the vendor to develop a solution, but the code revision, and associated Engineering Change package required for the revision will not be complete prior to JAF's scheduled startup. The observed condition is the result of the rod worth minimizer program enforcing rod blocks when the required action is permitted in compliance with the banked position withdrawal sequence and unexpected program aborts related to momentary control rod drift alarms. The issues are confirmed to have originated from the rod worth minimizer program, based on review of the rod worth minimizer alarm screen. There are no concerns with other related SSCs including control rod indication and controls. As a result, there is no extent of condition on other related SSCs. All troubleshooting legs are refuted, and the software error remains to be fixed with vendor support for the RWM.

JAF has a high degree of confidence that the software update being recommended will resolve the current issue. This confidence is based on troubleshooting efforts which included a vendor review of the issue and error log.

4. Provide an evaluation of all safety and security concerns associated with operating outside of the TS or license conditions that demonstrates that the noncompliance will not create undue risk to the public health and safety or involve adverse consequences to the environment.

This should include, as appropriate,

- A. A description of the condition and operational status of the plant;**
- B. Equipment that is out of service, inoperable, or degraded that may**
 - 1. Have risk significance**
 - 2. May increase the probability of a plant transient,**
 - 3. May complicate the recovery from a transient,**
 - 4. Or may be used to mitigate the condition.**

This evaluation shall include potential challenges to offsite and onsite power sources and forecasted weather conditions.

JAF is shutdown in MODE 3. Shutdown risk is GREEN. Equipment associated with mitigating a control rod drop accident including the control rods, the Average Power Range Monitors, the Condenser, off-gas, off-gas radiation monitors and associated trips, are operable and/or functional, as required per the TS and the Offsite Dose Calculation Manual.

As a result of this temporary situation, no maintenance activities will be performed on the Plant Process Computer, rod control system, or supported systems so that the integrity of rod movement is maintained to the extent possible.

No other safety-related equipment is inoperable. No production risk-significant activities are planned to be conducted during the enforcement discretion period.

All off-site power sources are fully operational, with no maintenance planned on these systems during the enforcement discretion period. All on-site power sources are fully operational, including up-to-date surveillances and the required fuel reserves. No maintenance related to on-site power is planned during the enforcement discretion period. JAF has verified the grid/off-site reserve power status with the transmission system operator.

There is a potential for rain and overcast weather between September 24 - 26, 2024 with forecasted temperatures between 56- and 71-degrees Fahrenheit. There are no security concerns with the potential to challenge continued operation at full power.

5. Provide a description and timeline of the proposed course of action to resolve the situation (e.g., likely success of the repairs) and explain how the resolution will not result in a different or unnecessary transient.

This shall include the time period for the requested discretion and demonstrate a high likelihood of completion within the requested period of enforcement discretion.

If the proposed course of action necessitates enforcement discretion greater than 5 days, the licensee shall justify why a longer-term solution (e.g., emergency amendment) should not be processed within the duration of a 5 days NOED.

The site has determined that the Rod Worth Minimizer cannot perform the required control function to prevent incorrect rod movement. Through troubleshooting, the station has confirmed the most likely cause of the issue is the RWM causing unexpected blocks and program aborts due to the receipt of an unexpected rod drift signal. Full restoration of the rod worth minimizer is expected to require an update to the Rod Worth Minimizer Software which will require an Engineering Design Change package and a 50.59 review. These will be completed by September 27, 2024.

The currently planned engineering design change package will involve software code updates while online, at 100% power, when the RWM is not required to be operable. Implementation and Acceptance testing will be performed under CEG's management procedures and processes to ensure implementation or testing (resolution of the issue) will not result in different or unnecessary/unanticipated transient.

The RWM performs the required TS function only during startup and therefore, once the station has completed Reactor Startup, no mitigation actions are required.

Termination of this Enforcement Discretion will occur upon Compliance with T.S. 3.3.2.1.C. JAF will submit an emergency TS amendment to revise TS 3.3.2.1.C Action statement to allow reactor startup with the RWM inoperable using alternate controls to ensure the required startup sequence is strictly adhered to. The Emergency TS amendment will be submitted by

September 25, 2024. This emergency amendment will request alternate methods be allowed until permanent repairs to the RWM are implemented but no longer than the remainder of the current operating cycle.

6. Detail and explain compensatory actions the plant has both taken and will take to reduce risk(s), focusing on both event mitigation and initiating event likelihood. This shall include how each compensatory action achieves one or more of the following:

A. Reduces the likelihood of initiating events;

B. Reduces the likelihood of the unavailability of redundant trains, during the period of enforcement discretion; and

C. Increases the likelihood of successful operator actions in response to initiating events.

To reduce the likelihood of the applicable initiating event (incorrect rod movement while RWM is inoperable) JAF will use a mitigating strategy comprised of a compensatory measure in combination with existing TS actions and procedural requirements as described below:

JAF will take the following compensatory measure:

- JAF will dedicate an independent third-party review of the rod pull sheets

The compensatory measure will add additional defense in depth to increase the likelihood of successful operator actions.

Beyond the above-described compensatory measure, the site will also take the existing TS 3.3.2.1 Action C.2.2 to have a second licensed operator or other qualified member of the technical staff verify movement of control rods is in compliance with banked position withdrawal sequence (BPWS).

In addition to the above TS required action, per procedure, control rod movement for the startup will take place in accordance with BWR Control Rod Movement Requirements, OP-AB-300-1001, which requires a second licensed operator to perform all Main Control Room peer checks per CEG's management model. Also, in accordance with CEG's management model, control rod movement during a startup is overseen by a dedicated Reactivity Management Senior Reactor Operator who acts to ensure all planned control rod movement is performed in accordance with approved procedures.

7. Demonstrate that the NOED condition, including compensatory actions will not result in more than a minimal increase in radiological risk, either in quantitative assessment that the risk will be within the normal work control levels (ICCDP less than or equal to 5e-7 and/or ICLERP less than or equal to 5e-8) or in a defensible qualitative manner.

The RWM is a reactor protection system-related function which prevents operators from moving an incorrect control rod during startup. Movement of a high-worth control rod could lead to a reactivity excursion and/or localized fuel clad integrity challenge and the RWM is designed to prevent such situations. Relative to the probabilistic risk assessment (PRA), the

RWM is not modeled because if such an event were to occur, the Reactor SCRAM signal would ultimately protect the core from severe accident conditions. In the JAF PRA, the SCRAM system is modeled with Reactor Pressure and Reactor Water level signals such that if either functionality fails in response to an initiating event, an Anticipated Transient Without SCRAM (ATWS) scenario would occur. By modeling the reactor SCRAM function, the PRA addresses the significance of the RPS system and control rods relative to severe accidents. While the RWM can prevent reactivity excursions and fuel challenges, it provides no additional protection against severe accidents and is of negligible risk significance to public health and safety.

The proposed allowances will provide for a second startup with an inoperable rod worth minimizer in the current calendar year, rather than the current limitation of a single startup with an inoperable RWM per calendar year. Rod withdrawal will be ensured to comply with the required sequence by a second licensed operator or member of the technical staff. These actions ensure compliance with a rod withdrawal sequence that mitigates the postulated core damage in the unlikely event of a rod drop accident at low power. These mitigating actions, in concert with the low likelihood of the initiating condition and the minimal increase in permitted frequency over the plant life will ensure there is no more than a minimal increase in radiological risk.

8. Confirm that the facility organization that normally reviews safety issues has reviewed and approved this request and that a written NOED request will be submitted within 2 days of the NRC staff's decision regarding the NOED.

The request for enforcement discretion has been approved by the JAF Plant Operations Review Committee (PORC) in accordance with Constellation Energy Corporation, LLC (CEG) Quality Assurance Program. A written NOED request will be submitted within two working days of the NRC staff's decision regarding the NOED.

An Emergency TS amendment will be submitted by September 25, 2024. This emergency amendment will request a temporary change to TS 3.3.2.1 Condition C which will allow the RWM to be inoperable for any plant startup until permanent repairs to the RWM are implemented but no longer than the remainder of the current operating cycle. JAF's decision to submit a follow-up license amendment was discussed in the call with the NRC on September 23, 2024.

9. Additional information for Severe Weather and Other Natural Phenomena NOEDs:

This request for enforcement discretion does not involve severe weather or other natural phenomena-related events; therefore, the associated severe weather and other natural phenomena NOED questions do not apply.