



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION I  
2100 RENAISSANCE BOULEVARD, SUITE 100  
KING OF PRUSSIA, PENNSYLVANIA 19406-2713

May 3, 2022

Mr. 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: R.E. GINNA NUCLEAR POWER PLANT, LLC – INTEGRATED INSPECTION  
REPORT 05000244/2022001**

Dear Mr. Rhoades:

On March 31, 2022, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at R.E. Ginna Nuclear Power Plant, LLC. On April 26, 2022, the NRC inspectors discussed the results of this inspection with Mr. Paul Swift, Site Vice President and other members of your staff. The results of this inspection are documented in the enclosed report.

Two findings of very low safety significance (Green) are documented in this report. Both of these findings involved violations of NRC requirements. We are treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest the violations or the significance or severity of the violations documented in this inspection report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement; and the NRC Resident Inspector at R.E. Ginna Nuclear Power Plant, LLC.

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region I; and the NRC Resident Inspector at R.E. Ginna Nuclear Power Plant, LLC.

This letter, its enclosure, and your response (if any) 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,

Erin E. Carfang, Chief  
Projects Branch 1  
Division of Operating Reactor Safety

Docket No. 05000244  
License No. DPR-18

Enclosure:  
As stated

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SUBJECT: R.E. GINNA NUCLEAR POWER PLANT, LLC – INTEGRATED INSPECTION REPORT 05000244/2022001 DATED MAY 3, 2022

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**U.S. NUCLEAR REGULATORY COMMISSION  
Inspection Report**

Docket Number: 05000244

License Number: DPR-18

Report Number: 05000244/2022001

Enterprise Identifier: I-2022-001-0046

Licensee: Constellation Energy Generation, LLC

Facility: R.E. Ginna Nuclear Power Plant, LLC

Location: Ontario, New York

Inspection Dates: January 1, 2022 to March 31, 2022

Inspectors: J. Schussler, Senior Resident Inspector  
S. Monarque, Resident Inspector  
C. Dukehart, Acting Resident Inspector  
K. Kolaczyk, Senior Reactor Operations Engineer  
J. Lilliendahl, Senior Emergency Response Coordinator  
S. Veunephachan, Health Physicist  
S. Wilson, Senior Health Physicist

Approved By: Erin E. Carfang, Chief  
Projects Branch 1  
Division of Operating Reactor Safety

Enclosure

## SUMMARY

The NRC continued monitoring the licensee’s performance by conducting an integrated inspection at R.E. Ginna Nuclear Power Plant, LLC, in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC’s program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information.

### List of Findings and Violations

Failure to Follow Procedure for Spent Fuel Pool Weir Gate Reinstallation			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Barrier Integrity	Green NCV 05000244/2022001-01 Open/Closed	[H.12] - Avoid Complacency	71111.15
<p>A self-revealed Green non-cited violation of Technical Specification 5.4.1 was identified when Constellation did not comply with a procedure specified in Regulatory Guide 1.33, “Quality Assurance Program Requirements (Operation),” Revision 2, February 1978, Section 3, “Procedures for Startup, Operation, and Shutdown of Safety-Related PWR Systems.” Specifically, Constellation failed to comply with Technical Procedure RF-303, “Weir Gate Removal and Installation,” Revision 001, by not opening the instrument air isolation to the spent fuel pool transfer slot weir gate valve V-7351H during the refueling outage in October 2021. On January 25, 2022 this resulted in an uncontrolled loss of water inventory from the spent fuel pool which corresponded to approximately a three inch loss of spent fuel pool water level over a nine minute period until identified and corrected by operators.</p>			
Failure to Promptly Correct a Condition Adverse to Quality on ‘A’ Emergency Diesel Generator Fuel Oil Return Piping			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000244/2022001-02 Open/Closed	[H.14] - Conservative Bias	71111.15
<p>A self-revealed Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Action,” was identified when Constellation failed to establish measures to ensure a condition adverse to quality was promptly corrected. Specifically, a previously identified leak by Constellation in December 2020, on the ‘A’ emergency diesel generator fuel oil return line pipe threaded connection failed, resulting in an adverse effect to the engine’s reliability and a fuel oil leak developed into the emergency diesel generator room on December 15, 2021.</p>			

### Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
LER	05000244/2021-002-00	LER 2021-002-00, Valid Auxiliary Feedwater System Actuation on Lowered Steam Generator Level Due to Failure to Control Main Feed Water Flow and Delay in Closing Main Steam Isolation Valves	71153	Closed

## PLANT STATUS

Ginna began the inspection period operating at rated thermal power and remained at, or near, rated thermal power for the inspection period.

## INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors performed activities described in IMC 2515, Appendix D, "Plant Status," conducted routine reviews using IP 71152, "Problem Identification and Resolution," observed risk significant activities, and completed on-site portions of IPs. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

On February 1, 2022, the operating license for R.E. Ginna Nuclear Power Plant, LLC held by Exelon Generation Company, LLC was transferred to Constellation Energy Generation, LLC (Constellation) as documented in the associated license amendments (ADAMS Accession No. ML22021B660). While some or all of the inspection documented in this report was performed while the license was held by Exelon Generation Company, LLC, this report will refer to the licensee as Constellation throughout.

## REACTOR SAFETY

### 71111.04 - Equipment Alignment

#### Partial Walkdown Sample (IP Section 03.01) (3 Samples)

The inspectors evaluated system configurations during partial walkdowns of the following systems/trains:

- (1) 'A' auxiliary feedwater following the completion of a quarterly surveillance test on February 24, 2022
- (2) 'A' containment spray following completion of a quarterly surveillance test on March 9, 2022
- (3) 'B' containment spray following completion of a quarterly surveillance test on March 9, 2022

#### Complete Walkdown Sample (IP Section 03.02) (1 Sample)

- (1) The inspectors evaluated system configurations during a complete walkdown of the 'A' emergency diesel generator on March 27, 2022

## 71111.05 - Fire Protection

### Fire Area Walkdown and Inspection Sample (IP Section 03.01) (4 Samples)

The inspectors evaluated the implementation of the fire protection program by conducting a walkdown and performing a review to verify program compliance, equipment functionality, material condition, and operational readiness of the following fire areas:

- (1) Cable tunnel on January 21, 2022
- (2) Intermediate building clean side main steam header floor and top floor on January 25, 2022
- (3) Relay room on January 25, 2022
- (4) Intermediate building clean side basement on March 27, 2022

## 71111.06 - Flood Protection Measures

### Inspection Activities - Internal Flooding (IP Section 03.01) (2 Samples)

The inspectors evaluated internal flooding mitigation protections in the:

- (1) Rubber door seal inspection and seal replacement for flood doors in the relay room, 'A' emergency diesel generator, 'A' battery room, and main control room on January 24, 2022
- (2) Manholes (MH1 and MH1A) on March 3, 2022

## 71111.07A - Heat Exchanger/Sink Performance

### Annual Review (IP Section 03.01) (1 Partial)

The inspectors evaluated readiness and performance of:

- (1) (Partial)  
'A' component cooling water heat exchanger in field inspection, cleaning, and eddy current inspections on March 31, 2022

## 71111.11Q - Licensed Operator Requalification Program and Licensed Operator Performance

### Licensed Operator Performance in the Actual Plant/Main Control Room (IP Section 03.01) (1 Sample)

- (1) The inspectors observed and evaluated licensed operator performance in the control room during:
  - 'B' emergency diesel generator monthly surveillance test on February 2, 2022
  - Shift turnover meeting on March 27, 2022

### Licensed Operator Requalification Training/Examinations (IP Section 03.02) (1 Sample)

- (1) The inspectors observed and evaluated licensed operator performance in the simulator during licensed operator requalification training on January 25, 2022. The training involved a scenario that contained, but was not limited to, instrumentation failures, electric plant open phase condition, secondary plant transients, and a loss of



coolant accident. Additionally, the inspectors observed licensed operator requalification training on the use of risk informed completion time technical specifications on February 4, 2022.

#### 71111.12 - Maintenance Effectiveness

##### Maintenance Effectiveness (IP Section 03.01) (2 Samples)

The inspectors evaluated the effectiveness of maintenance to ensure the following structures, systems, and components remain capable of performing their intended function:

- (1) Maintenance rule (a)(3) evaluation of periodic maintenance effectiveness self assessment on February 2, 2022
- (2) Spent fuel pool pumps and valves removed from in-service test program, reviewed preventative maintenance and testing frequency on March 23, 2022

#### 71111.13 - Maintenance Risk Assessments and Emergent Work Control

##### Risk Assessment and Management Sample (IP Section 03.01) (7 Samples)

The inspectors evaluated the accuracy and completeness of risk assessments for the following planned and emergent work activities to ensure configuration changes and appropriate work controls were addressed:

- (1) Evaluation of plant risk (green) during unplanned volume control tank level transmitter 112 troubleshooting on February 4, 2022
- (2) Evaluation of plant risk (action green) during the planned calibration of reactor coolant system pressure instrument 420 on February 16, 2022
- (3) Evaluation of plant risk (green) during replacement of 'C' service water pump on February 17, 2022
- (4) Evaluation of plant risk (green) during unplanned emergent work activities to troubleshoot 'A' battery bank ground alarm and high mast lighting electrical issues on February 18, 2022
- (5) Evaluation of plant risk (green) of the protected equipment for spent fuel pool cooling following refueling outage when the spent fuel pool time to boil is less than 72 hours on February 25, 2022
- (6) Evaluation of plant risk (green) during planned maintenance on the 'B' motor driven auxiliary feedwater pump on February 28, 2022
- (7) Evaluation of plant risk (green) during planned maintenance of the 'A' component cooling water heat exchanger on March 30, 2022

#### 71111.15 - Operability Determinations and Functionality Assessments

##### Operability Determination or Functionality Assessment (IP Section 03.01) (6 Samples)

The inspectors evaluated the licensee's justifications and actions associated with the following operability determinations and functionality assessments:

- (1) 'A' emergency diesel generator operability assessment following fuel oil return pipe connection to day tank joint failure on January 10, 2022

- (2) Containment operability evaluation following identification that containment penetration two was disassembled and reassembled without performing a local leak rate test, OPEVAL-21-004, on January 12, 2022
- (3) Screen house flood protection dike degradation functional assessment and evaluation on February 3, 2022
- (4) Operability assessment of the 'A' service water pump differential pressure trend approaching alert limit for in-service testing requirements on February 7, 2022
- (5) 'A' motor driven auxiliary feedwater motor operated valve 4007 leakage during surveillance testing on February 24, 2022
- (6) Operability assessment of the spent fuel pool level following water level reduction due to weir gate seal becoming depressurized during planned maintenance on March 21, 2022

#### 71111.19 - Post-Maintenance Testing

##### Post-Maintenance Test Sample (IP Section 03.01) (7 Samples)

The inspectors evaluated the following post-maintenance testing activities to verify system operability and/or functionality:

- (1) Operational testing of the 'B' control room toxic gas monitors following planned replacement of chlorine and ammonia detectors, transmitters, and power supplies on January 4, 2022
- (2) Leak rate testing of steam generator communication flange penetration 2, inside and outside of containment on January 19, 2022
- (3) Operational testing of the technical support diesel generator following maintenance on January 19, 2022
- (4) Operational testing of the 'A' emergency diesel generator cable vault sump pump following unplanned maintenance on February 9, 2022
- (5) Operational testing of the 'C' service water pump following planned replacement on February 18, 2022
- (6) Operational testing of the 'B' motor driven auxiliary feedwater pump following planned replacement of the lube oil heat exchanger, motor operated valve 400B and 4028 stem lubrication and grease, and preventative maintenance on the pump and speed reducer on March 1, 2022
- (7) Operational testing of the 'C' flex pump PBD01C following planned maintenance and unplanned corrective maintenance on March 22, 2022

#### 71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance testing activities to verify system operability and/or functionality:

##### Surveillance Tests (other) (IP Section 03.01) (4 Samples)

- (1) STP-O-12.1, "Emergency Diesel Generator A" on January 20, 2022
- (2) STP-O-13, "Fire Pump Operation and System Alignment" and STP-O-13.22.1, "Fire System Flow Alarm Check S29" on February 9, 2022
- (3) STP-O-3QB, "Containment Spray Pump B Quarterly Test" on March 4, 2022
- (4) STP-O-16QT, "Auxiliary Feedwater Turbine Pump - Quarterly" on March 16, 2022

In-service Testing (IP Section 03.01) (1 Sample)

- (1) STP-O-16QA, "Auxiliary Feedwater Pump A - Quarterly" on February 14, 2022

71114.06 - Drill Evaluation

Select Emergency Preparedness Drills and/or Training for Observation (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated an emergency drill in the simulator control room and technical support center involving an Alert, Site Area Emergency, and General Emergency declaration due to a scenario which contained, but was not limited to, a simulated unisolable reactor coolant leak due to steam generator tube rupture that was faulted outside containment on February 22, 2022.

**OTHER ACTIVITIES – BASELINE**

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

IE01: Unplanned Scrams per 7000 Critical Hours Sample (IP Section 02.01) (1 Sample)

- (1) Submitted data from January 1, 2021 through December 31, 2021

IE03: Unplanned Power Changes per 7000 Critical Hours Sample (IP Section 02.02) (1 Sample)

- (1) Submitted data from January 1, 2021 through December 31, 2021

IE04: Unplanned Scrams with Complications (USwC) Sample (IP Section 02.03) (1 Sample)

- (1) Submitted data from January 1, 2021 through December 31, 2021

71152A - Annual Follow-up Problem Identification and Resolution

Annual Follow-up of Selected Issues (Section 03.03) (2 Samples)

The inspectors reviewed the licensee's implementation of its corrective action program related to the following issues:

- (1) Review of Constellation's work group evaluation and corrective actions associated with nuclear instrumentation bistable card failures (AR 04421050)
- (2) Constellation's work group evaluation and corrective actions associated with the spent fuel pool charcoal filter efficiency test failure (AR 04440887)

71153 - Follow-Up of Events and Notices of Enforcement Discretion

Event Report (IP Section 03.02) (1 Sample)

The inspectors evaluated the following licensee event report (LER):

- (1) LER 05000244/2021-002-00, Valid Auxiliary Feedwater System Actuation on Lowered Steam Generator Level Due to Failure to Control Main Feed Water Flow and Delay in Closing Main Steam Isolation Valves (ADAMS Accession No. ML21336A082). The inspection conclusions associated with this LER are documented under the Inspection Results section of Inspection Report 05000244/2021004, dated January 20, 2022 (ADAMS Accession No. ML22020A116). This LER is closed.

**INSPECTION RESULTS**

Failure to Follow Procedure for Spent Fuel Pool Weir Gate Reinstallation			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Barrier Integrity	Green NCV 05000244/2022001-01 Open/Closed	[H.12] - Avoid Complacency	71111.15
<p>A self-revealed Green non-cited violation of Technical Specification 5.4.1 was identified when Constellation did not comply with a procedure specified in Regulatory Guide 1.33, "Quality Assurance Program Requirements (Operation)," Revision 2, February 1978, Section 3, "Procedures for Startup, Operation, and Shutdown of Safety-Related PWR Systems." Specifically, Constellation failed to comply with Technical Procedure RF-303, "Weir Gate Removal and Installation," Revision 001, by not opening the instrument air isolation to the spent fuel pool transfer slot weir gate valve V-7351H during the refueling outage in October 2021. On January 25, 2022 this resulted in an uncontrolled loss of water inventory from the spent fuel pool which corresponded to approximately a three inch loss of spent fuel pool water level over a nine minute period until identified and corrected by operators.</p> <p><u>Description:</u> The spent fuel pool and transfer slot at Ginna are connected via a normally closed weir gate. The weir gate uses instrument air with nitrogen as a back-up to inflate a seal which isolates the spent fuel pool from the transfer slot area. The spent fuel pool and transfer slot are both located in the auxiliary building.</p> <p>During the fall of 2021 as part of the refueling outage, Constellation depressurized and removed the weir gate to facilitate fuel movement from the spent fuel pool into the transfer slot and then to the reactor vessel inside containment. Constellation used work order C93759676 and refueling procedure RF-303, "Weir Gate Removal and Installation," to complete these tasks. Technical Procedure RF-303 restoration steps 6.2.11 and 6.2.12 instructed Constellation to open the instrument air isolation to spent fuel pool transfer slot weir gate valve V-7351H and open the nitrogen isolation valve to the spent fuel pool weir gate bladder valve V-1830H, respectively. Step 6.2.11 to open the instrument air isolation to spent fuel pool transfer slot weir gate valve V-7351H was not completed.</p> <p>Subsequently, on January 25, 2022, as part of planned maintenance Constellation isolated the nitrogen supply to the spent fuel pool weir gate. Upon isolating the nitrogen supply to the weir gate, Constellation observed in the main control room the spent fuel pool level lowering unexpectedly from 276.538 feet to 276.275 feet over approximately a 9-minute period.</p>			

Operators responded to the field and opened the instrument air isolation valve to the spent fuel pool weir gate, V-7351H. Once instrument air was supplied to the weir gate, the spent fuel pool lowering inventory stopped. In conjunction with lowering inventory, the water level in the transfer slot and spent pool equalized due to the transfer slot area remaining full of water following the recent refueling outage.

Corrective Actions: Constellation took immediate corrective actions to stop the lowering spent fuel pool level, opening the instrument air valve. Also, Constellation generated a condition report, conducted a human performance review board, and is performing a corrective action program evaluation.

Corrective Action References: AR 04473666

Performance Assessment:

Performance Deficiency: Constellation failed to implement procedure RF-303 instructions to properly align the spent fuel pool and fuel transfer canal, which was a performance deficiency that was within Constellation's ability to foresee and correct and should have been prevented.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Human Performance attribute (Procedure Adherence) of the Barrier Integrity cornerstone and adversely affected the cornerstone objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. Specifically, reducing approximately 3 inches of water from the spent fuel pool reduced the volume of water available for cooling spent fuel.

Significance: The inspectors assessed the significance of the finding using IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," dated January 1, 2021. The inspectors performed a review of this finding using the guidance provided in IMC 0609, Appendix A, Exhibit 3, "Barrier Integrity Screening Questions," and determined this finding is of very low safety significance (Green) because it did not (1) adversely affect decay heat removal capabilities from the spent fuel pool causing the pool temperature to exceed the maximum analyzed temperature limit specified in the licensing basis; (2) involve fuel handling; (3) result in a loss of spent fuel pool water inventory decreasing below the minimum analyzed level limit specified in the site-specific licensing basis; and (4) affect neutron absorber or fuel placement in the spent fuel pool.

Cross-Cutting Aspect: H.12 - Avoid Complacency: Individuals recognize and plan for the possibility of mistakes, latent issues, and inherent risk, even while expecting successful outcomes. Individuals implement appropriate error reduction tools. Specifically, Constellation failed to identify and correct procedure implementation techniques which allowed latent issues with worker place keeping standards, resulting in risk and mistakes to occur even when expecting successful outcomes.

Enforcement:

Violation: Technical Specification 5.4.1.a, "Procedures," requires in part, "Written procedures shall be established, implemented, and maintained covering the following activities: The applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978." Regulatory Guide 1.33, Revision 2, Appendix A, Section 3.h, identifies "Fuel Storage Pool Purification and Cooling System."

Contrary to the above, from October 19, 2021 to January 25, 2022, Constellation did not implement written instructions. Specifically, procedure RF-303, "Weir Gate Removal and Installation," was not adequately implemented. As a result, the spent fuel pool level reduced by 3 inches lowering the volume of water available to cool spent fuel.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

Failure to Promptly Correct a Condition Adverse to Quality on 'A' Emergency Diesel Generator Fuel Oil Return Piping

Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000244/2022001-02 Open/Closed	[H.14] - Conservative Bias	71111.15

A self-revealed Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," was identified when Constellation failed to establish measures to ensure a condition adverse to quality was promptly corrected. Specifically, a previously identified leak by Constellation in December 2020, on the 'A' emergency diesel generator fuel oil return line pipe threaded connection failed, resulting in an adverse effect to the engine's reliability and a fuel oil leak developed into the emergency diesel generator room on December 15, 2021.

Description: On December 15, 2021, Constellation was performing a planned surveillance test of the 'A' emergency diesel generator. Near the completion of the surveillance test, the 'A' emergency diesel generator fuel oil return line pipe threaded connection on top of the fuel oil day tank sheared. The fuel oil return line pipe provides a flow path for fuel oil not used in the engine combustion process to return to the fuel oil day tank. The pipe to tank joint failure created an approximately one gallon per minute fuel oil leak into the 'A' emergency diesel generator room. Since the surveillance test was nearly completed, Constellation held the joint in place, reducing the volume of leaking fuel oil and completed an orderly shutdown of the emergency diesel generator. Due to the pipe joint failure, Constellation initially determined the 'A' emergency diesel generator to remain inoperable and implemented a work order, C93774663, to repair the failed joint. The 'A' emergency diesel generator was returned to service following repairs and testing later that day.

Constellation previously identified and documented a leak from the diesel fuel oil return pipe threaded connection to the fuel oil day tank in the corrective action program on December 9, 2020, in AR 04389200. Constellation generated work order C93774663, and work was scheduled to be performed on November 15, 2021, during the 'A' emergency diesel generator system outage window. However, the system outage window with the diesel fuel oil return line threaded joint corrective maintenance was rescheduled to April 2022 due to emergent electric work in the offsite switchyard by the grid operator.

Following the 'A' emergency diesel generator fuel return line failure, Constellation performed an evaluation to determine the effects of the failure. Constellation concluded that given the specific details of the fuel return line failure, the fuel oil storage tank contained enough fuel oil for the diesel engine to meet its 40 hour mission time during a design basis accident. Corrective Actions: The 'A' emergency diesel generator was initially declared inoperable. Corrective maintenance and post-maintenance testing was performed restoring the component to operable. A technical evaluation determined failure exposure time, past operability, and reportability. Lastly a corrective action program evaluation was completed.

Corrective Action References: AR 04466775

Performance Assessment:

Performance Deficiency: Constellation failed to promptly correct an identified fuel oil return line leak which resulted in adversely affecting the 'A' emergency diesel generator's reliability and capability.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the 'A' emergency diesel generator was taken out of service for emergent repairs consequently the reliability and capability were adversely affected.

Significance: The inspectors assessed the significance of the finding using IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," dated January 1, 2021. The inspectors performed a review of this finding using the guidance provided in IMC 0609, Appendix A, Exhibit 3, "Mitigating Systems Screening Questions," and determined this finding is of very low safety significance (Green) because the questions in Exhibit 3, Section A were answered No.

Cross-Cutting Aspect: H.14 - Conservative Bias: Individuals use decision making-practices that emphasize prudent choices over those that are simply allowable. A proposed action is determined to be safe in order to proceed, rather than unsafe in order to stop. Specifically, Constellation rescheduled 'A' emergency diesel generator fuel oil return line corrective maintenance in the future as allowable, as opposed to determining if the known deficiency was safe in order to proceed with rescheduling.

Enforcement:

Violation: 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and non-conformances are promptly identified and corrected. Contrary to the above, from December 9, 2020 to December 15, 2021, Constellation failed to ensure measures were established to assure conditions adverse to quality were promptly corrected prior to the fuel oil return line pipe failure on December 15, 2021.

Enforcement Action: This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy.

Assessment

71152A

The inspectors reviewed Constellation's corrective actions regarding the failure of five nuclear instrument bistable cards between March 9, 2020 and October 3, 2021. The bistable cards are a new design from Westinghouse that were installed between 2014 and 2017.

The inspectors reviewed Constellation's work group evaluation documented in the corrective action program as AR 4421050 and assessed Constellation's determination that the likely cause of the failures was the bistable cards' surface mounted input fuse. Specifically,

discontinuity was found internal to the fuse, which gave the indications of an open fuse although the fuse element was intact. The most likely cause of the discontinuity was attributed to thermomechanical stresses during mounting, handling, or fuse application or testing.

The inspectors reviewed Constellation's initial and long-term corrective actions. Constellation replaced the failed bistable boards. They also determined which bistable boards could cause a plant transient with a single board failure and replaced these boards with cards of the original design. Constellation is maintaining an inventory of spare boards of the original design to replace any subsequent failures until all the cards are ultimately replaced with an upgraded design that removes the susceptible fuses.

The inspectors independently reviewed whether actions were appropriate under 10 CFR 50.65, Maintenance Rule, and 10 CFR Part 21, Reporting of Defects and Noncompliance. Since the failures are related to the fuse design and not maintenance preventable functional failures, monitoring under a(1) of the Maintenance Rule would not be warranted. The inspectors assessed the Westinghouse determination that the bistable card failures did not represent substantial safety hazards since the failed conditions would not have adversely affected safety.

The inspectors questioned whether any of the bistable cards could fail without indication of failing and what the impact would be. Constellation determined that while most cards provide immediate indications of failure, there are 14 cards which, if they failed, would be in their normal deenergized state while the unit is operating at-power. This condition would not be easily recognized since the output of a deenergized card is the same as the output of a failed card. The initial review determined that the card failures would not prevent safety systems from operating. It was determined that if multiple cards were to fail, protection grade interlocks, or permissive effects would be evident during plant operation. Constellation reviewed the potential card failure scenarios and verified that adequate procedures exist to respond to these potential effects.

The inspectors concluded that Constellation's actions in identifying and resolving the issue were commensurate with the safety significance. The inspectors independently evaluated the deficiencies noted above for significance in accordance with the guidance in IMC 0612, Appendix B, "Issue Screening," and Appendix E, "Examples of Minor Issues." The inspectors determined that none of the conditions were deficiencies of greater than minor significance and therefore are not subject to enforcement action in accordance with the NRC's Enforcement Policy.

Assessment	71152A
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The inspectors reviewed Constellation's corrective actions regarding the spent fuel pool charcoal filter efficiency failure in August 2021. During the performance of surveillance test STP-E-47.10, a sample from spent fuel pit charcoal filtration system failed to meet the greater than 85.5 percent efficiency rating acceptance criteria in Technical Specification 5.5.10.c.

The inspectors reviewed Constellation's corrective action program evaluation, work orders, extent of condition review, and corrective actions associated with the efficiency failure of the spent fuel pit charcoal filters. The inspectors assessed Constellation's problem identification threshold, work group evaluation, prioritization, and timeliness of corrective actions to determine whether Constellation had taken timely and appropriate corrective actions. Constellation entered this issue into their corrective action program as AR 04440887.



The inspectors determined that Constellation performed a thorough review of the issue and determined the cause of the sample efficiency failure to meet the technical specification acceptance criteria. Constellation's immediate corrective actions were to notify the control room supervisor and system engineer, generate an issue report, and replace the charcoal filters before starting the refueling outage. At the time of the test, the spent fuel pool charcoal filter was not required to be operable because Constellation was not in the mode of applicability for Technical Specification 3.7.10 and 5.5.10. The charcoal filters are required to meet efficiency requirements, operable, when one or more fuel assemblies in the auxiliary building has decayed less than 60 days since being irradiated. Lastly, based on 2020 and 2021 surveillance test results, maintenance activities and post-maintenance testing the inspectors determined that the spent fuel charcoal filters were operable when required during the 2021 refueling outage and reasonable assurance of operability was maintained previously during the spring 2020 refueling outage.

Constellation also performed additional testing of the failed charcoal filters to determine the efficiency. The licensee determined that if they were monitoring and trending prior spent fuel pool charcoal iodide test results, it would have led the station to further prepare for a filter replacement.

Corrective actions include updating procedures to generate an issue report if laboratory test results come back with a low margin to the technical specification limit, briefing of maintenance and operations on threshold to initiate an issue report when parameters meet acceptance but are low in margin, and fleet benchmarking to determine how other stations address low margin test results.

The inspectors independently reviewed Constellation's requirements, methodology, and work group evaluation and interviewed program owners. The inspectors determined that Constellation's actions in identifying and resolving the issue were appropriate and timely and commensurate with the safety significance. The inspectors independently evaluated the deficiencies noted above for significance in accordance with the guidance in IMC 0612, Appendix B, "Issue Screening," and Appendix E, "Examples of Minor Issues." The inspectors determined that none of the conditions were deficiencies of greater than minor significance and therefore are not subject to enforcement action in accordance with the NRC's Enforcement Policy.

## **EXIT MEETINGS AND DEBRIEFS**

The inspectors verified no proprietary information was retained or documented in this report.

- On March 29, 2022, the inspectors presented the PI&R inspection results to Mr. David Wilson, Director Site Engineering, and other members of the licensee staff.
- On April 26, 2022, the inspectors presented the integrated inspection results to Mr. Paul Swift, Site Vice President, and other members of the licensee staff.

**DOCUMENTS REVIEWED**

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.05	Corrective Action Documents Resulting from Inspection	04469581	Turbine Building Middle Level Fire Door F501 not fully closing	01/03/2022
		04473167	S05 Cable Tunnel Deluge System Pipe Hanger Loose	01/21/2022
		04477040	12 dpm leak from flange Up Steam on 5136	02/09/2022
		04483185	Diesel fuel oil leak on V-5965	03/07/2022
		04483189	Diesel fuel oil leak on V-5963	03/07/2022
71111.06	Work Orders	C93773244	Perform Visual Inspection and Replacement of Door Neoprene Gaskets ('A' Train)	11/29/2020
71111.15	Corrective Action Documents	04389200	EDG 'A' minor diesel fuel oil leak at NPT threads on daytank	12/09/2020
		04461152	KDG01A SOW terminated early due to RGE emergent issue	11/15/2021
		04466775	Fuel Leak at threaded pipe nipple below EDG 'A' pressure regulator	12/15/2021
		04473666	Weir Gate Leakage	01/25/2022
	Corrective Action Documents Resulting from Inspection	04472411	Screen House internal flood barrier degraded base angle	01/18/2022
		04475537	One of sixteen dogs on SD/18 DG B Ext Ovhd DR not latched	02/02/2022
		04477194	NRC observation - Missing conduit clips on perimeter 28A	02/10/2022
		04477206	NRC identified - Disagreement in 2020 ARERR Effluent Values	02/10/2022
		04482621	V-15916 (IA PCV to AOV 145 (letdown divert)) bracket loose	03/04/2022
	Engineering Evaluations	ESR-21-0525	'A' EDG Fuel Oil leak on top of day tank	Revision 000
	Procedures	RF-302	Fuel Handling Tool Checkout and Operation in Containment	Revision 15 and 16
		RF-303	Weir Gate Removal and Installation	Revision 001
	Work Orders	C93759676	G1R43 Refuel Ginna Reactor in accordance with refueling procedures RF-100 through RF-601	
C93774663		Repair minor diesel fuel oil leak near top of threaded nipple on EDG A day tank		
71111.22	Corrective Action Documents Resulting from Inspection	04472759	SDG03, 'A' EDG fuel oil booster pump surge damper, minor leak	01/19/2022
		04478110	2 dpm leak from 4304A, A MDAFW recirc chk vlv	02/14/2022
		04478918	V-5967, DG fuel xfer pump crosstie, packing leak 1 drop per day	02/17/2022

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		04482614	1 dpm BA leak from fitting on V-2859 (inst isol vlv) CS B PI	03/04/2022
		04483720	BACCP: NRC identified DBA on 868B packing leakoff pipe cap	03/09/2022
71152A	Corrective Action Documents	04440887	Action Report - SFP Charcoal Iodide Removal Efficiency	08/16/2021
		04440887-04	Action Request Assignment - Work Group Evaluation	Final