



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, ILLINOIS 60532-4352

May 13, 2020

Mr. Bryan C. Hanson
Senior VP, Exelon Generation Company, LLC
President and CNO, Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: CLINTON POWER STATION – INTEGRATED INSPECTION REPORT
05000461/2020001

Dear Mr. Hanson:

On March 31, 2020, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Clinton Power Station. On April 2, 2020, the NRC inspectors discussed the results of this inspection with Mr. T. Chalmers, 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. One of these findings involved a violation of NRC requirements. We are treating this violation as a non-cited violation (NCV) consistent with Section 2.3.2 of the Enforcement Policy.

If you contest the violation or the significance or severity of the violation 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 III; the Director, Office of Enforcement; and the NRC Resident Inspector at Clinton Power Station.

If you disagree with a cross-cutting aspect assignment or a finding not associated with a regulatory requirement 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 III; and the NRC Resident Inspector at Clinton Power Station.

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,

/RA/

Kenneth R. Riemer, Chief
Branch 1
Division of Reactor Projects

Docket No. 05000461
License No. NPF-62

Enclosure:
As stated

cc w/ encl: Distribution via LISTSERV®

Letter to Bryan Hanson from Kenneth Riemer dated May 13, 2020.

SUBJECT: CLINTON POWER STATION – INTEGRATED INSPECTION REPORT
05000461/2020001

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U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report

Docket Number: 05000461

License Number: NPF-62

Report Number: 05000461/2020001

Enterprise Identifier: I-2020-001-0042

Licensee: Exelon Generation Company, LLC

Facility: Clinton Power Station

Location: Clinton, IL

Inspection Dates: January 01, 2020 to March 31, 2020

Inspectors: J. Beavers, Senior Resident Inspector
T. Go, Health Physicist
J. Kutlesa, Physical Security Inspector
C. Matthews, Illinois Emergency Management Agency
D. Sargis, Resident Inspector

Approved By: Kenneth R. Riemer, Chief
Branch 1
Division of Reactor Projects

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting an integrated inspection at Clinton Power Station, 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

FLEX Diesel Generator Phase Rotation Incorrect			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green FIN 05000461/2020001-01 Open/Closed	[H.3] - Change Management	71111.22
The inspectors identified a Green finding when the licensee failed to implement programmatic controls that assure the viability and reliability of the primary FLEX diesel generator. Specifically, the licensee failed to verify that the FLEX diesel generator 1FX01KA phase rotation was appropriate.			

Safety Relief Valve Wiring Issue Results in Condition Prohibited by Technical Specifications			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000461/2020001-02 Open/Closed	[H.5] - Work Management	71153
A self-revealed Green finding and associated non-cited violation (NCV) of Technical Specification (TS) 3.5.1, Emergency Core Cooling System, was identified when safety relief valve (SRV) 1B21-F041B automatic depressurization system (ADS) function was determined to be inoperable from May 2017 through October 2019. Specifically, Technical Specifications Limiting Condition for Operation 3.5.1, Emergency Core Cooling System - Operating, Action E (one ADS valve inoperable) requiring an inoperable ADS valve be restored within 14 days, was not met.			

Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
LER	05000461/2019-004-00	LER 2019-004-00 for Clinton Power Station, Unit 1, Safety Relief Valve Wiring Issue Results in Condition Prohibited by Technical Specifications.	71153	Closed
LER	05000461/2019-004-01	LER 2019-004-01 for Clinton Power Station, Unit 1, Safety Relief Valve Wiring Issue Results in Condition Prohibited by Technical Specifications	71153	Closed

PLANT STATUS

The unit began at full rated thermal power and approximately 1120 MWe on January 1, 2020. The unit remained at full rated thermal power through the end of 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/readingrm/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." From January 1 – March 19, 2020, the inspectors performed plant status activities described in IMC 2515, Appendix D, "Plant Status," and conducted routine reviews using IP 71152, "Problem Identification and Resolution." 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.

Starting on March 20, 2020, in response to the National Emergency declared by the President of the United States on the public health risks of the coronavirus (COVID-19), resident inspectors were directed to begin telework and to remotely access licensee information using available technology. During this time the resident inspectors performed periodic site visits each week and during that time conducted plant status activities as described in IMC 2515, Appendix D; and observed risk significant activities when warranted. In addition, resident and regional baseline inspections were evaluated to determine if all or portion of the objectives and requirements stated in the IP could be performed remotely. If the inspections could be performed remotely, they were conducted per the applicable IP. In the cases where it was determined the objectives and requirements could not be performed remotely, management elected to postpone and reschedule the inspection to a later date.

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) control rod drive system on January 24, 2020
- (2) standby liquid control system on February 26, 2020
- (3) high pressure core spray system on March 17, 2020

71111.05 - Fire Protection

Fire Area Walkdown and Inspection Sample (IP Section 03.01) (2 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) Fire Zone CB-1i, control building control room HVAC [heating, ventilation, and air conditioning], elevation 825' on January 3, 2020
- (2) Fire Zone A-2a, reactor core isolation cooling pump room, elevation 707' on February 21, 2020

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 restoration of 'A' low pressure heater string on March 25, 2020.

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

- (1) The inspectors observed and evaluated licensed operator requalification training on February 4, 2020.

71111.12 - Maintenance Effectiveness

Maintenance Effectiveness (IP Section 03.01) (1 Sample)

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

- (1) Division 1 diesel generator abnormal indications on January 17, 2020

Quality Control (IP Section 03.02) (1 Sample)

The inspectors evaluated the effectiveness of maintenance and quality control activities to ensure the following SSC remains capable of performing its intended function:

- (1) incorrect fasteners installed in feedwater piping and shutdown service water piping

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (6 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) NS4 reactor vessel water level channel calibration, elevated risk due to new procedure with sensor bypass of potential hydraulic impact during restoration, Work Order 4753993-01
- (2) switchyard breaker 4506 gas recharge, elevated risk due to loss of redundancy for main generator output, Work Order 4962415-05
- (3) standby liquid control continuity meter relay replacement, elevated risk due to loss of redundancy and work in an energized panel, Work Order 4917594-01
- (4) 'B' residual heat removal test return valve motor operated valve thrust verification, clean, and inspect; elevated risk due to low pressure injection train loss, Work Order 4801226-04
- (5) high pressure core spray pump operability, elevated risk due to system impact on probabilistic risk, Work Order 4993656-01
- (6) 4160 Bus 1A1 main feeder breaker replacement, Work Order 1676095

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 03.01) (4 Samples)

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

- (1) Action Request 4309392, "Evaluate One Nut Installed on FW [feedwater] Check Valve 1B21F010A"
- (2) Action Request 4316513, "RCIC [reactor core isolation cooling] Pump Suction Pressure High"
- (3) Action Request 4316019, "Loose Filter Piece in VC [control room HVAC] 'B' Supply Filter"
- (4) Action Request 4327611, "4160 Bus 1A1 Main Feeder Breaker Fail to Close"

71111.19 - Post-Maintenance Testing

Post-Maintenance Test Sample (IP Section 03.01) (3 Samples)

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

- (1) Division 1 diesel generator operability after abnormal indications on January 17, 2020, Work Order 500037-03
- (2) control room ventilation system hydramotor full stroke after replacement of hydramotor 0TZVC039 on February 19, 2020
- (3) 'B' residual heat removal test return valve motor operated valve after maintenance on March 9, 2020

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

Surveillance Tests (other) (IP Section 03.01) (1 Sample)

- (1) CPS 9080.13, "Diesel Generator 1B 24 Hour Run and Hot Restart Operability," on March 5, 2020

FLEX Testing (IP Section 03.02) (1 Sample)

- (1) FLEX diesel generator 1FX01KA 6 month unloaded run on January 28, 2020

71114.06 - Drill Evaluation

Drill/Training Evolution Observation (IP Section 03.02) (1 Sample)

The inspectors evaluated:

- (1) The inspectors observed a Technical Support Center drill on February 24, 2020.

RADIATION SAFETY

71124.03 - In-Plant Airborne Radioactivity Control and Mitigation

Permanent Ventilation Systems (IP Section 03.01) (2 Samples)

The inspectors evaluated the configuration of the following permanently installed ventilation systems:

- (1) standby gas treatment system A and B with the related high efficiency particulate air (HEPA)/charcoal filter banks 0VG01SA and 0VG08FB
- (2) control room ventilation system heating, ventilation, and air conditioning (HVAC) with the related HEPA/charcoal filter banks 0VC09SA and 0VC07SB

Temporary Ventilation Systems (IP Section 03.02) (1 Sample)

The inspectors evaluated the configuration of the following temporary ventilation systems:

- (1) portable HEPA Model 1000; semi-permanently attached to a temporary Kelly building at rad-waste elevation 737'

Use of Respiratory Protection Devices (IP Section 03.03) (1 Sample)

- (1) The inspectors evaluated the licensee's use of respiratory protection devices.

Self-Contained Breathing Apparatus for Emergency Use (IP Section 03.04) (1 Sample)

- (1) The inspectors evaluated the licensee's use and maintenance of self-contained breathing apparatuses.

71124.04 - Occupational Dose Assessment

Source Term Characterization (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated licensee performance as it pertains to radioactive source term characterization.

External Dosimetry (IP Section 03.02) (1 Sample)

- (1) The inspectors evaluated licensee performance as it pertains to external dosimetry that is used to assign occupational dose.

Internal Dosimetry (IP Section 03.03) (1 Sample)

The inspectors evaluated the following internal dose assessments for actual internal exposures:

- (1) internal dose assessment of a worker that was contaminated while performing under vessel activities

Special Dosimetric Situations (IP Section 03.04) (2 Samples)

The inspectors evaluated the following special dosimetric situations:

- (1) personnel exposure investigations; specifically, for effective dose equivalent from external radiation (EDEX) dose calculation during under vessel work activities accordance to RP-AA-210 procedure; dated 11/20/2019; Sentinel System document No. 1141
- (2) dose assessment of a declared pregnant worker; dated 06/04/2019; document No. 059818

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) Unit 1 (January 1, 2019 – December 31, 2019)

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

- (1) Unit 1 (January 1, 2019 – December 31, 2019)

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

- (1) Unit 1 (January 1, 2019 – December 31, 2019)

71153 - Followup of Events and Notices of Enforcement Discretion

Event Followup (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated contraband in the protected area and licensee's response on January 28, 2020.

Event Report (IP Section 03.02) (1 Sample)

The inspectors evaluated the following licensee event reports (LERs):

- (1) LER 05000461/2019-004-00 and LER 05000461/2019-004-01, Safety Relief Valve Wiring Issue Results in Condition Prohibited by Technical Specifications (ADAMS Accession No. ML19347A427 and ML20031D058 respectively). The inspection conclusions associated with this LER are documented in this report under Inspection Results Section 71153.

Personnel Performance (IP Section 03.03) (1 Sample)

- (1) The inspectors evaluated feedwater heater 4A return to service and subsequent loss of 'A' train low pressure feedwater heating and licensee's performance on March 24, 2020.

INSPECTION RESULTS

FLEX Diesel Generator Phase Rotation Incorrect			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green FIN 05000461/2020001-01 Open/Closed	[H.3] - Change Management	71111.22
<p>The inspectors identified a Green finding when the licensee failed to implement programmatic controls that assure the viability and reliability of the primary FLEX diesel generator. Specifically, the licensee failed to verify that the FLEX diesel generator 1FX01KA phase rotation was appropriate.</p>			
<p><u>Description:</u></p> <p>On July 11, 2019, the licensee performed phase rotation checks on the 'A' FLEX diesel generator. The phase rotation checks identified that the connections on the diesel and the connections to in-plant equipment were reversed; the diesel electrical output was counter-clockwise, and the phase rotation of in-plant equipment was clockwise. Therefore, if the FLEX diesel was connected to the in-plant equipment, then it would cause phase-dependent loads to rotate backwards and had the potential to damage in-plant equipment.</p> <p>The FLEX diesel generator was installed per Engineering Change 392335. The generator can be connected to FLEX load centers via temporary cables if required by station procedures. The phase rotation of the diesel generators must match the phase rotation of the load centers to ensure that installed plant equipment would function properly.</p> <p>Clinton Power Station was committed to Nuclear Energy Institute (NEI) 12-06, "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide," Revision 0, during installation and implementation of their FLEX strategies. Nuclear Energy Institute 12-06, Section 11.5.1, stated that "FLEX mitigation equipment should be initially tested, or other reasonable means used to verify performance conforms to the limiting FLEX requirements." Engineering Change 392335 specified that phase rotation was a critical parameter for the FLEX diesel generators. The critical parameter was not translated into a work instruction that performed</p>			

the initial testing to verify phase rotation. As a result, the licensee did not identify the incorrect phase rotation during original installation.

The site implementation of FLEX was inspected under Temporary Instruction 191 in 2016. During that inspection, the inspectors requested information regarding electrical phase rotation checks as documented in Action Request 2685173, "Open NRC Inspection Questions," dated June 23, 2016. The licensee did not perform phase rotation checks at that time because they relied on the vendor testing to verify that the diesel had the correct rotation. However, the diesel output cabling was wired in a reverse rotation configuration. The inspectors determined that the NRC question during Temporary Instruction 191 was not properly evaluated and resolved. Therefore, the performance deficiency was determined to be NRC identified.

Corrective Actions: The licensee changed the diesel generator output wiring so that its phase rotation matched the phase rotation of in-plant equipment.

Corrective Action References: Action Request 4263520, "FLEX Diesel Generator Phase Rotation"

Performance Assessment:

Performance Deficiency: The inspectors determined that the licensee failed to verify that the FLEX diesel generator phase rotation was appropriate to support the site FLEX strategy in accordance with NEI 12-06, Revision 0, which was a performance deficiency.

Screening: The inspectors determined the performance deficiency was more than minor because it was associated with the Design Control 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 performance deficiency resulted in the 'A' FLEX diesel generator being unavailable to supply adequate AC power to station loads. This determination was confirmed by a cross-regional panel convened on October 8, 2019. The finding was also similar to IMC 0612, Appendix E, "Examples of Minor Issues," Example 1.a, in that the subsequent testing determined that the equipment was non functional.

Significance: The inspectors assessed the significance of the finding using Appendix A, "The Significance Determination Process (SDP) for Findings At-Power." The inspectors answered "No" to questions 1-3 in Exhibit 2, Section E. Therefore, the finding screened as Green.

Cross-Cutting Aspect: H.3 - Change Management: Leaders use a systematic process for evaluating and implementing change so that nuclear safety remains the overriding priority. Specifically, when the licensee implemented their FLEX strategy, they did not systematically evaluate and identify the generator phase rotation was a critical parameter that could impact the ability of the FLEX diesel generator to perform its function.

Enforcement:

Inspectors did not identify a violation of regulatory requirements associated with this finding.

Safety Relief Valve Wiring Issue Results in Condition Prohibited by Technical Specifications			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000461/2020001-02 Open/Closed	[H.5] - Work Management	71153
<p>A self-revealed Green finding and associated non-cited violation (NCV) of Technical Specification (TS) 3.5.1, Emergency Core Cooling System, was identified when safety relief valve (SRV) 1B21-F041B automatic depressurization system (ADS) function was determined to be inoperable from May 2017 through October 2019. Specifically, Technical Specifications Limiting Condition for Operation 3.5.1, Emergency Core Cooling System - Operating, Action E (one ADS valve inoperable) requiring an inoperable ADS valve be restored within 14 days, was not met.</p> <p><u>Description:</u></p> <p>On October 2, 2019, with the unit shut down and in Mode 5 for refueling outage C1R19, the licensee was performing SRV testing. Safety Relief Valve 1B21-F041B did not open upon demand using the Division 1 main control room (MCR) hand switch. Further investigation identified that the Division 1 MCR switch for SRV 1B21-F041B opened SRV 1B21-F051B, and the Division 1 MCR switch for SRV 1B21-F051B opened SRV 1B21-F041B. The Division 2 MCR switches for SRV 1B21-F041B and SRV 1B21-F051B operated correctly. The affected SRVs were adjacent to each other in the reactor drywell. Investigation determined this condition was a Division 1 SRV wiring issue that occurred during a refueling outage in May 2017.</p> <p>Both SRVs in question had no component signage. The conduit and the wiring for each SRV had character identification. During reassembly, the wiring was inserted into the incorrect conduit. The work package lacked the specificity to ensure the correct wires were installed in the correct conduit for the correct SRVs. Post-maintenance testing, performed at a different time than the wiring reassembly, relied on the conduit identification in the work package and failed to identify this transposition of wires.</p> <p>Safety Relief Valve 1B21-F051B had a safety/relief (S/R) function and a low-low set (LLS) function. The LLS relief function is armed upon relief actuation of an S/R valve and will cause a greater magnitude blowdown (in the relief mode) for specified S/R valves and a subsequent cycling of a single LLS valve. The LLS and S/R functions were not affected by this condition. Safety Relief Valve 1B21-F041B has an S/R function and an ADS function. The S/R functions were not affected by this condition. However, due to accumulator volume design requirements for the ADS SRV, this condition rendered the ADS function for SRV 1B21-F041B inoperable since May 2017. As a result, Technical Specifications Limiting Condition for Operation 3.5.1, Emergency Core Cooling System - Operating, Action E (one ADS valve inoperable), which requires an inoperable ADS valve be restored within 14 days, was not met in Modes 1, 2, and 3 (with steam dome pressure greater than 150 psig) from May 2017 to October 2019. Repairs, that is configuration restorations, were made to both SRVs per Work Order 4966208, and post-maintenance testing was satisfactorily completed prior to subsequent mode change and reactor startup.</p> <p>On November 29, 2019, an LER was submitted to the NRC under 10 CFR 50.73(a)(2)(i)(B), any operation or condition which was prohibited by the plant's Technical Specifications. On</p>			

January 29, 2020, and after completion of the licensee's investigation, a revision to the LER was also submitted under the same requirement.

Corrective Actions: The Division 1 wiring for SRV 1B21-F041B and SRV 1B21-F051B was corrected and post-maintenance testing completed. Work order instructions will be revised to add this event as operating experience and for SRV determination/re-termination steps to incorporate more robust verification practices, including defined scope on wiring designators. Operations personnel will create and place SRV equipment identification number signage during the next refueling outage to eliminate the need for craft and operators to rely on conduit numbers to identify SRVs.

Corrective Action References: Action Request 4284526, "SRV 51B Actuates Instead of 41B"

Performance Assessment:

Performance Deficiency: The licensee failed to screen and implement key steps into work order instructions as required by MA-AA-1000-1001, "Key Step Process." Specifically, the work order was vague and required the performance of multiple actions within a single step, which resulted in the transposition of solenoid wires between two adjacent safety relief valves.

Significance Determination: The finding could reasonably screen to green using IMC 0609 Appendix A, "The Significance Determination Process for Findings At-Power" because although inoperable, the 41B ADS valve retained its PRA functional capability with limited reduction in reliability. There was no impact to the overpressure protection function of either the 41B ADS or 51B LLS safety relief valves. There was a minimal impact on the depressurization function. Due to the design of the system, even with the crossed wiring, automatic and manual ADS actuation of the 41B valve using the "arm and depress" pushbuttons in the control room would have opened the valve as required unless there was also a failure in the division 2 actuation circuit. Manual depressurization if ADS is inhibited using individual valve controls for 41B would have opened 51B and vice versa. Since the valves have different functions (ADS vs. LLS), they are designed with different accumulator sizes, although neither accumulator is sufficient for a 24-hour PRA mission without the normal air supply or back-up air bottles. As a result, under a narrow set of specific circumstances involving additional failures that are not a result of the performance deficiency, reliability of the 41 B ADS valve could be impacted.

To confirm the screening result, the SRA performed a detailed risk evaluation using the Clinton Standardized Plant Analysis Risk Model, version 8.59. The ADS logic is not explicitly modeled. Therefore, the SRA used the SRV failure to open basic event as a surrogate to model the degraded condition. Assuming an exposure period of 1 year and a significantly increased valve failure probability over the baseline failure probability of $2.2E-3$, the change in risk was below $1E-7$ /yr., which is a finding of very low safety significance. The dominant sequences involved Anticipated Transient Without Scram events in which the overpressure function of the SRVs is successful, but the subsequent depressurization function fails, in part, due to the degraded condition.

Cross-Cutting Aspect: H.5 - Work Management: The organization implements a process of planning, controlling, and executing work activities such that nuclear safety is the overriding priority. The work process includes the identification and management of risk commensurate to the work and the need for coordination with different groups or job activities.

Enforcement:

Violation: Technical Specifications Limiting Condition for Operation 3.5.1, Emergency Core Cooling System - Operating, Action E (One ADS valve inoperable), requires an inoperable ADS valve be restored within 14 days in Modes 1, 2, and 3 (with steam dome pressure greater than 150 psig).

Contrary to the above, between May 2017 and October 2019, the licensee failed to restore an inoperable ADS valve within 14 days in Modes 1, 2, and 3 (with steam dome pressure greater than 150 psig).

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

EXIT MEETINGS AND DEBRIEFS

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

- On April 2, 2020, the inspectors presented the integrated inspection results to Mr. T. Chalmers, Site Vice President, and other members of the licensee staff.
- On March 6, 2020, the inspectors presented the radiation protection inspection results to Mr. N. Plumey, Director of Site Operations and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.04	Procedures	CPS 3304.01E001	Control Rod Drive Hydraulic Electrical Lineup	7
		CPS 3304.01V001	Control Rod Hydraulic and Control Valve Lineup	16d
		CPS 3309.01V001	High Pressure Core Spray Valve Lineup	11b
		CPS 3314.01E001	Standby Liquid Control Electrical Lineup	9a
		CPS 3314.01V001	Standby Liquid Control Valve Lineup	10a
71111.05	Fire Plans	CPS 1893.04M103	707 Auxiliary: RCIC Pump Room Prefire Plan	5a
		CPS 1893.04M370	825 Control: Control Room HVAC Prefire Plan	7a
71111.12	Work Orders	5000036	Abnormal Division 1 Diesel Generator Indications During 9080.01	01/17/2020
71111.13	Procedures	CPS 3505.01	345 & 138KV Switchyard (SY)	21
		CPS 9051.01	HPCS Pump and HPCS Water Leg Pump Operability	49a
		CPS 9432.04A	NS4 Reactor Vessel Water Level 1B21-N081A Channel Calibration	0b
	Work Orders	1676095	4160V Bus 1A1 Main Feed Breaker Replacment	0
		4801226	Residual Heat Removal B Test Return Valve Motor Operated Valve Thrust Verification and Clean and Inspect	02/26/2020
		4917594	FNE 1C41M600B Replace Squib Continuity Meter/Relay 'B'	
		4962415	Ameren 4506 Gas Recharge	02/14/2020
71111.15	Corrective Action Documents	4244788	Filters on 0VC07SB are damaged	04/30/2019
		4309392	Evaluate One Nut Installed of NW Check Valve 1B21F010A	01/10/2020
		4309402	Evaluate Safety Related (But not ASME SEC III) Bolting	01/10/2020
		4316019	Loose Filter Piece in VC B Supply Filter	02/07/2020
	Engineering Changes	630382	Evaluation of One Non-ASME Class 1 Nut Installed on FW Check Valve 1B21F010A	0
		630400	Evaluation of Nonconforming Bolting Installed at the	0

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			Downstream of Valve 1SX006C	
71111.19	Corrective Action Documents	4318989	Hydramotor 0TZVC039 (0VC18YA Damper) Excessive Oil Leakage	03/19/2020
	Procedures	CPS 8452.04	AH91/NH91 Hydramotor Actuator Maintenance	18
		CPS 9080.01D001	Diesel Generator 1A Operability	45a
		CPS 9381-01C002	MOV Thermal Overload Bypass Post Maintenance Verification Checklist	29
	Work Orders	1661760	Hydramotor Preventative Maintenance 0VC18YA	02/18/2020
71111.22	Procedures	CPS 3862.01	FLEX Diesel Generator Operation	0c
		CPS 9080.13	Diesel Generator 1A (1B) 24 Hour Run and Hot Restart Operability	43a
	Work Orders	4937828	FLEX - 1FX01KA DG Functional	01/28/2020
71124.03	Calibration Records	0X3011511	Posi3 USB Test Results SCBA Test	10/17/2019
	Corrective Action Documents	AR 4316019	Loose Filter Piece in Control Room Vent (VC) B Supply Filter	02/07/2020
	Miscellaneous	013542	Fit Test Result Report	05/31/2019
		NIOSH Report 34-8707-2882-0	3M H-Series Hoods/TR-300 Respirators	02/07/2011
		PSI Report No. 00473567	Quarterly Service Air and Self Contained Breathing Apparatus	01/03/2019
		PSI Report No. 00473567	Quarterly Service Air and Self Contained Breathing Apparatus	10/18/2019
	Procedures	CPS-3214.02	Breathing Air System	12a
		RP-AA-444	Fit Test Checklist	10
		RP-AA-825-1014-F-07	Use of the 3M H-422-10 Versaflo Series Hoods	1
71124.04	Procedures	RP-AA-203-1001	Personnel Exposure Investigation No. 1141	11/20/2019
		RP-AA-270	Declaration of Pregnancy No. 059818	06/04/2019
71151	Corrective Action Documents	4327611	1AP07EK 1A1 Main Feed Breaker Fail to Close	0
71153	Corrective Action Documents	4311763	Contraband in PA	0

