



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

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

October 30, 2019

Mr. Bryan Hanson
Senior Vice President, Exelon Generation Company, LLC
President and Chief Nuclear Officer, Exelon Nuclear
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: R.E. GINNA NUCLEAR POWER PLANT, LLC – INTEGRATED INSPECTION
REPORT 05000244/2019003

Dear Mr. Hanson:

On September 30, 2019, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at R.E. Ginna Nuclear Power Plant, LLC. On October 16, 2019, 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.

The NRC inspectors did not identify any finding or violation of more than minor significance.

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 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

/RA/

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

Docket No. 05000244
License No. DPR-18

Enclosure:
As stated

cc w/ encl: Distribution via LISTSERV

SUBJECT: R.E. GINNA NUCLEAR POWER PLANT, LLC – INTEGRATED INSPECTION
REPORT 05000244/2019003 DATED OCTOBER 30, 2019

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U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report

Docket Number: 05000244

License Number: DPR-18

Report Number: 05000244/2019003

Enterprise Identifier: I-2019-003-0033

Licensee: Exelon Generation Company, LLC

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

Location: Ontario, NY

Inspection Dates: July 1, 2019 to September 30, 2019

Inspectors: J. Schussler, Senior Resident Inspector
N. Perry, Senior Resident Inspector
H. Anagnostopoulos, Senior Health Physicist
S. Hammann, Senior Health Physicist
J. Hawkins, Senior Resident Inspector
M. Henrion, Emergency Response Coordinator
S. Horvitz, Resident Inspector
D. Kern, Senior Reactor Inspector
J. Krafty, Senior Resident Inspector
S. Obadina, Project Engineer
J. Schoppy, Senior Reactor Inspector
S. Shaffer, Senior Health Physicist

Approved By: Erin E. Carfang, Chief
Reactor Projects 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 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

No findings or violations of more than minor significance were identified.

Additional Tracking Items

None.

PLANT STATUS

Ginna began the inspection period at 100 percent power. The unit remained at, or near, 100 percent power for the entire 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 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.

REACTOR SAFETY

71111.01 - Adverse Weather Protection

External Flooding Sample (IP Section 03.04) (1 Sample)

- (1) The inspectors evaluated the standby auxiliary feedwater annex door and aqua fence for readiness to cope with external flooding on July 11 and August 29, 2019

71111.04Q - Equipment Alignment

Partial Walkdown Sample (IP Section 03.01) (4 Samples)

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

- (1) 'A' motor driven auxiliary feedwater following surveillance test on July 19, 2019
- (2) 'C' motor driven standby feedwater following post-test system restoration and realignment on August 22, 2019
- (3) 'B' motor driven auxiliary feedwater following surveillance test on August 28, 2019
- (4) 'A' residual heat removal system following surveillance test on September 4, 2019

71111.05Q - Fire Protection

Quarterly Inspection (IP Section 03.01) (6 Samples)

The inspectors evaluated fire protection program implementation in the following selected areas:

- (1) 'B' battery room on August 20, 2019
- (2) 'A' emergency diesel generator room on August 20, 2019
- (3) Screenhouse operating floor on August 21, 2019

- (4) Screenhouse basement on August 21, 2019
- (5) Intermediate building main steam header on August 21, 2019
- (6) Auxiliary building basement on September 25, 2019

71111.06 - Flood Protection Measures

Inspection Activities - Internal Flooding (IP Section 02.02a.) (1 Sample)

The inspectors evaluated internal flooding mitigation protections in the

- (1) The inspectors evaluated circulating water level switches for internal flooding mitigation protections in the screen house basement and turbine building condenser pit on September 26, 2019

71111.07A - Heat Sink Performance

Annual Review (IP Section 02.01) (1 Sample)

The inspectors evaluated readiness and performance of:

- (1) 'A' and 'B' component cooling water heat exchangers on August 21, 2019

71111.11Q - Licensed Operator Regualification 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 main control room during 'B' safety injection pump testing on September 19, 2019; 'C' safety injection pump testing on September 26, 2019; and a load decrease in preparation for turbine driven auxiliary feedwater surveillance testing on September 27, 2019.

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

- (1) The inspectors observed and evaluated licensed operator performance in the simulator during licensed operator regualification training on August 27, 2019. The training involved a scenario that contained, but was not limited to, a pressurizer level instrument failing low, a turbine control valve failing closed, a steam generator tube leak that developed into a tube rupture, and safety injection and motor driven auxiliary feedwater pumps failing to automatically start.

71111.12 - Maintenance Effectiveness

Routine Maintenance Effectiveness Inspection (IP Section 02.01) (2 Samples)

The inspectors evaluated the effectiveness of routine maintenance activities associated with the following equipment and/or safety significant functions:

- (1) Service air, system 12 on August 21, 2019
- (2) Offsite power, system 60 on August 23, 2019

71111.13 - Maintenance Risk Assessments and Emergent Work Control

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

The inspectors evaluated the risk assessments for the following planned and emergent work activities:

- (1) Planned maintenance, elevated risk (green), Bus 17, undervoltage testing on July 10, 2019
- (2) Planned maintenance, elevated risk (yellow), technical support center battery inverter on August 19, 2019
- (3) Planned maintenance, elevated risk (yellow), service air compressor, out of service on August 27, 2019
- (4) Planned maintenance, elevated risk (yellow), refueling water storage tank level loop 921 and boric acid flow actuator on September 11-12, 2019
- (5) Planned maintenance, elevated risk (green), sodium hydroxide chemical addition tank partial drain-down to support relief valve maintenance and chemical addition on September 17-18, 2019
- (6) Planned maintenance, elevated risk (green), offsite circuit 767, system outage window on September 24, 2019
- (7) Planned maintenance, elevated risk (green), 'C' safety injection pump on September 26, 2019

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 02.02) (6 Samples)

The inspectors evaluated the following operability determinations and functionality assessments:

- (1) 'A' emergency diesel generator Basler Exciter cabinet door improperly bolted and hinged connection on July 17, 2019
- (2) Nuclear power range instrument N-43 step change on July 18, 2019
- (3) 'D' motor driven standby auxiliary feedwater pump elevated motor temperature on August 14, 2019
- (4) 'B' emergency diesel generator pre-lube oil pump excessive noise on August 22, 2019
- (5) 'B' component cooling water pump inboard bearing vibration increasing trend on September 6, 2019
- (6) 'C' service water pump degraded discharge expansion joint on September 19, 2019

71111.19 - Post-Maintenance Testing

Post-Maintenance Test Sample (IP Section 03.01) (5 Samples)

The inspectors evaluated the following post-maintenance tests:

- (1) Service air compressor planned maintenance on August 27, 2019
- (2) 'A' safety injection pump planned maintenance on September 10, 2019
- (3) 'B' steam generator flow, channel 1 planned calibration performed on September 17, 2019

- (4) Containment spray system spray additive (sodium hydroxide) tank planned maintenance on September 18, 2019
- (5) 'C' safety injection pump planned maintenance on September 27, 2019

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

Surveillance Tests (other) (IP Section 03.01) (6 Samples)

- (1) STP-O-16QA, 'A' motor driven auxiliary feedwater quarterly test on July 16, 2019
- (2) STP-O-12.2, 'B' emergency diesel generator monthly test on August 28, 2019
- (3) STP-O-2.2QA, 'A' residual heat removal quarterly test on September 3, 2019
- (4) STP-O-R-19 and STP-O-2.3A, 'A' emergency diesel generator auto start under-voltage logic and trip testing on September 11-12, 2019
- (5) STP-O-2.1QB, 'B' safety injection pump quarterly test on September 19, 2019
- (6) STP-O-2.2-COMP-B, 'B' residual heat removal comprehensive test on September 25, 2019

71114.06 - Drill Evaluation

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

- (1) The inspectors evaluated an exercise scenario involving a General Emergency declaration due to a simulated steam generator tube rupture, an open steam generator safety valve, and a failure of the reactor vessel level indicating system on August 20, 2019.

RADIATION SAFETY

71124.05 - Radiation Monitoring Instrumentation

Walk Downs and Observations (IP Section 02.01) (1 Sample)

The inspectors evaluated radiation monitoring instrumentation during plant walkdowns.

- (1) The inspectors evaluated radiation monitoring instrumentation during plant walkdowns to include the following:
 1. Portable survey instruments
 2. Radiation area monitors and continuous air monitors
 3. Personnel contamination monitors, portal monitors and small article monitors

Calibration and Testing Program (IP Section 02.02) (1 Sample)

The inspectors evaluated the calibration and testing program implementation.

- (1) The inspectors evaluated Exelon's calibration and testing program. The inspectors specifically assessed the following instruments and equipment:
 1. Laboratory instrumentation
 2. Whole body counter

3. Post-accident monitoring instrumentation
4. Portal monitors, personnel contamination monitors, and small article monitors
5. Portable survey instruments, area radiation monitors, and air samplers/continuous air monitors
6. Instrument calibrator
7. Calibration and check sources
8. Electronic alarming dosimeters

71124.07 - Radiological Environmental Monitoring Program

Site Inspection (IP Section 02.01) (1 Sample)

The inspectors evaluated the radiological environmental monitoring program implementation.

- (1) The inspectors walked down various thermoluminescent dosimeter and air and water sampling locations and reviewed associated calibration and maintenance records. The inspectors observed the sampling of various environmental media as specified in the Offsite Dose Calculation Manual. The inspectors reviewed the groundwater monitoring program as it applies to selected potential leaking structures, systems, and components, and 10 CFR 50.75(g) records of leaks, spills, and remediation since the previous inspection.

Groundwater Protection Initiative (GPI) Implementation (IP Section 02.02) (1 Sample)

- (1) The inspectors reviewed: groundwater monitoring results; changes to the Groundwater Protection Initiative (GPI) program since the last inspection; anomalous results or missed groundwater samples; leakage or spill events including entries made into the decommissioning files (10 CFR 50.75(g)); evaluations of surface water discharges; and evaluation of any positive groundwater sample results including appropriate stakeholder notifications and effluent reporting requirements.

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

MS06: Emergency AC Power Systems (IP Section 02.05) (1 Sample)

- (1) July 1, 2018 through June 30, 2019

MS07: High Pressure Injection Systems (IP Section 02.06) (1 Sample)

- (1) July 1, 2018 through June 30, 2019

MS08: Heat Removal Systems (IP Section 02.07) (1 Sample)

- (1) July 1, 2018 through June 30, 2019

MS09: Residual Heat Removal Systems (IP Section 02.08) (1 Sample)

- (1) July 1, 2018 through June 30, 2019

MS10: Cooling Water Support Systems (IP Section 02.09) (1 Sample)

- (1) July 1, 2018 through June 30, 2019

71152 - Problem Identification and Resolution

Annual Follow-up of Selected Issues (IP Section 02.03) (1 Sample)

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

- (1) Elevated temperatures on the main generator step-up transformer high side bolted connection results in a forced outage on August 29, 2019

OTHER ACTIVITIES – TEMPORARY INSTRUCTIONS, INFREQUENT AND ABNORMAL

60855.1 - Operation of an Independent Spent Fuel Storage Installation at Operating Plants

Operation of an Independent Spent Fuel Storage Installation at Operating Plants (1 Sample)

- (1) The inspector evaluated the licensee's activities related to long-term operation and monitoring of their independent spent fuel storage installation.

INSPECTION RESULTS

Observation: Failure to Follow Procedure Regarding Transformer Elevated Temperature on Bolted Connection	71152
<p>The inspectors reviewed Exelon's corrective actions, both planned and taken, for a bolted connection above the high side (115 kV) bushing on the 'B' phase of the generator step-up transformer as a result of observed elevated temperatures. The inspectors reviewed the associated condition reports and root cause analysis to determine the cause of the elevated temperatures and actions taken to address the problem. The inspectors also assessed if the actions taken were sufficient to mitigate similar deficiencies. Finally, the inspectors evaluated if there were commonalities between other transformer bolted connections.</p> <p>The inspectors determined that the corrective actions implemented for the bolted connection repair were reasonable and adequately addressed the cause. However, routine thermography performed in June and July 2018 showed elevated temperature on the 'B' phase bolted connection, measuring 94.5 degrees C. Exelon procedure MA-AA-716-230-1003, Revision 5 in effect at the time, required for a bolted connection with an observable temperature of 90 degrees C to be classified as action level yellow, requiring a condition report to be initiated, the problem be assessed, and a recommended course of action be determined. This was not done, and as a result the bolted connection maintenance was conducted in October 2018 using incorrect work instructions. After the October 2018 maintenance, the elevated resistance on the 'B' bolted connection ultimately resulted in a temperature of 96.7 degrees C in March 2019. The bolted connection was measured again</p>	

on June 6, 2019, resulting in a temperature of 115.4 degrees C, and a forced outage to repair the connection occurred in June 2019.

The inspectors determined that not initiating a condition report in accordance with Exelon procedure MA-AA-716-230-1003, Revision 5 was a performance deficiency reasonably within Exelon's ability to foresee and correct and therefore should have been prevented. The inspectors independently evaluated the deficiency for significance in accordance with the guidance in IMC 0612, Appendix B, "Issue Screening," issued December 31, 2017, and Appendix E, "Examples of Minor Issues," issued October 1, 2018. The inspectors determined the performance deficiency was minor and, therefore, not subject to enforcement action because the condition did not adversely affect the initiating events cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations.

EXIT MEETINGS AND DEBRIEFS

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

- On September 25, 2019, the inspectors presented the independent spent fuel storage installation inspection results to E. John Fischer and other members of the licensee staff.
- On October 16, 2019, 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
60855.1	Procedures	OU-AA-630-101	Dry Cask Storage/ISFSI Inspection Surveillance Program	Rev. 01
71111.01	Corrective Action Documents Resulting from Inspection		04263450	
71111.04Q	Corrective Action Documents Resulting from Inspection		04273647	
			04273721	
	Drawings	33013-1238	Standby Auxiliary Feedwater (FW) P&ID	43
		33013-1247	Auxiliary Coolant Residual Heat Removal (AC) P&ID	49
	Procedures	STP-O-30.2	RHR System Valve and Breaker Position Verification	001
		STP-O-30.5	Standby Auxiliary Feedwater Pumps Valves and Breakers	5
71111.05Q	Drawings	33013-2544	Turbine Building Fire Response Plan	15
		33013-2551	Containment Structure & Intermediate BLDG Fire Response Plan	8
		33013-2559	Control Building Fire Response Plan	14
		33013-2571	Screen House Fire Response Plan	8
	Procedures	FRP-4.0	Auxiliary Building Basement and Sub-basement	010
71111.06	Corrective Action Documents		04220857 04227052 04228525	
71111.07A	Corrective Action Documents		04228828 04229054 04231159	
	Corrective Action Documents Resulting from Inspection		04273647	
	Miscellaneous		Heat Exchanger Inspection Report for 'A' CCW HX, March 11, 2019 Heat Exchanger Inspection Report for 'B' CCW HX,	

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
			March 18, 2019	
71111.12	Corrective Action Documents		04037887 04087519 04112655 04133397 04173325 04221773 04251988	
	Miscellaneous		Maintenance Rule System Basis Document Service Air (a)(1) Determination Template for 04133397 (a)(2) Determination Template for 04133397 Maintenance Rule System Basis Document Offsite Power	
71111.13	Miscellaneous		NaOH Tank Chemistry Sample Results dated September 16, 2019	
	Procedures	CPI-CV-110A	Calibration of Boric Acid Flow Actuator OP/110A	021
		CPI-LVL-921	Calibration of Refueling Water Storage Tank Level Loop 921	000902
		EOP ATT-5.5	SAFW with Suction from DI Water Storage Tank during SBO	5
		O6.13	Daily Surveillance Log	199
		OPG-Protected-Equipment	Operations Protected Equipment Program	21
71111.15	Corrective Action Documents		03994313 04085999 04227891 04252081 04256761 04268151 04276497 04276497	
	Corrective Action Documents Resulting from Inspection		04264781 04264784	
	Drawings	CP94B048	Sheet 1, Garlock Style 204HP Expansion Joint with Angular & Lateral Offsets	

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Engineering Evaluations	A11108-C-001	Seismic Operability Evaluation of Relays on Cabinet DGAEC with Observed Hinge Weld Cracking	0
		OPEVAL-19-004	'D' Standby Auxiliary Feedwater AFW Pump PSF01B	000
		OPEVAL-19-005	'B' CCW PAC02B	000
	Miscellaneous		Garlock Sealing Technologies letters to Ginna Nuclear, dated October 23, 2002 and August 9, 2013	
		GMP-39-01-01	Garlock, 14 inch Expansion Joints Maintenance and Inspection for SSW02, SSW03, SSW04, SSW05	12
		VTD-A0152-4070	FM/ALCO 251 Engine Maintenance Schedule	3
	Work Orders		C92453901 C93642939 C93653657 C93661667 C93663941	
71111.19	Corrective Action Documents		04278159 04278201	
	Drawings	33013-1261	Containment Spray	47
		33013-1274	Waste Disposal - Gas Hydrogen and Nitrogen	26
	Miscellaneous	CME-50-02-52/SIP1A	Westinghouse 480V Air Circuit Breaker, Type DB-50 Bus 14, Position 20A Safety Injection Pump 1A Maintenance for 52/SIP1A	003
	Procedures	O-6.1	Equipment Operator Rounds and Log Sheets	089
		O-6.13	Daily surveillance log	199
		STP-O.2.1QA	Safety Injection Pump 'A' Quarterly Test	018
	Work Orders		C93677970	
			C93658042 C9365043 C93713642	
71111.22	Procedures	STP-O-16QT	Auxiliary Feedwater Turbine Pump - Quarterly	022
		STP-O-2.1QB	Safety Injection Pump 'B' Quarterly Test	18
		STP-O-2.2-COMP-B	Residual Heat Removal Pump B Comprehensive Test	014
		STP-O-2.2QA	Residual Heat Removal Pump A Inservice Test	018

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		STP-O-R-19	Diesel Generator 'A' - Auto Start Under-voltage Logic Test	003
		STP-O-R-2.3A	Diesel Generator 'A' Trip Testing	006