



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION I
2100 RENAISSANCE BLVD., SUITE 100
KING OF PRUSSIA, PA 19406-2713

January 21, 2016

EA-14-235

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

SUBJECT: R.E. GINNA NUCLEAR POWER PLANT, LLC - INTEGRATED INSPECTION
REPORT 05000244/2015004

Dear Mr. Hanson:

On December 31, 2015, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at the R.E. Ginna Nuclear Power Plant, LLC (Ginna). The enclosed inspection report documents the inspection results, which were discussed on January 19, 2016, with Mr. Joseph Pacher, Site Vice President, and other members of the Ginna staff.

NRC inspectors examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

No NRC-identified or self-revealing findings were identified during this inspection.

In accordance with Title 10 of the *Code of Federal Regulations* 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC's Public Document Room or from the Publicly

B. Hanson

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Sincerely,

/RA/

Anthony Dimitriadis, Chief
Reactor Projects Branch 1
Division of Reactor Projects

Docket No. 50-244
License No. DPR-18

Enclosure:
Inspection Report 05000244/2015004
w/Attachment: Supplementary Information

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U.S. NUCLEAR REGULATORY COMMISSION**REGION I**

Docket No. 50-244

License No. DPR-18

Report No. 05000244/2015004

Licensee: Exelon Generation Company, LLC (Exelon)

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

Location: Ontario, New York

Dates: October 1, 2015, through December 31, 2015

Inspectors: N. Perry, Senior Resident Inspector
J. Petch, Resident Inspector
H. Anagnostopoulos, Health Physicist
J. DeBoer, Emergency Preparedness Inspector
N. Floyd, Reactor Inspector
S. Horvitz, Project Engineer
M. Patel, Operations Engineer
S. Pindale, Senior Reactor Inspector
D. Render, Project Manager
A. Rosebrook, Senior Project Engineer
A. Siwy, Project Engineer
G. Stock, Resident Inspector

Approved by: Anthony Dimitriadis, Chief
Reactor Projects Branch 1
Division of Reactor Projects

Enclosure

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SUMMARY

Inspection Report 05000244/2015004; 10/01/2015 – 12/31/2015; Ginna; Routine Integrated Inspection Report.

This report covered a 3-month period of inspection by resident inspectors and announced inspections performed by regional inspectors. No findings were identified. The U.S. Nuclear Regulatory Commission's (NRC's) program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 5.

REPORT DETAILS

Summary of Plant Status

Ginna began the inspection period operating at 100 percent power. On October 18, 2015, operators commenced a shutdown for a planned refueling and maintenance outage (G1R39). The station entered Mode 6 (refueling) on October 21. Following the completion of refueling and maintenance activities, operators commenced a reactor startup on November 6. Operators returned the unit to 100 percent power on November 9. On November 21, operators reduced power to approximately 81 percent for about 6 hours for planned maintenance on a main turbine control valve. The unit remained at or near 100 percent reactor power for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01 – 2 samples)

.1 Readiness for Seasonal Extreme Weather Conditions

a. Inspection Scope

The inspectors performed a review of Exelon's readiness for the onset of seasonal cold temperatures. The review focused on the screen house, the intermediate building, the auxiliary building, the standby auxiliary feedwater (AFW) building and annex, and the emergency diesel generator (EDG) rooms. The inspectors reviewed the Updated Final Safety Analysis Report (UFSAR), technical specifications (TSs), control room logs, and the corrective action program (CAP) to determine what temperatures or other seasonal weather could challenge these systems and to ensure Exelon personnel had adequately prepared for these challenges. The inspectors reviewed station procedures, including Exelon's seasonal weather preparation procedure and applicable operating procedures. The inspectors performed walkdowns of the selected systems to ensure station personnel identified issues that could challenge the operability of the systems during cold weather conditions. Documents reviewed for each section of this inspection report are listed in the Attachment.

b. Findings

No findings were identified.

.2 Readiness for Impending Adverse Weather Conditions

a. Inspection Scope

The inspectors reviewed Exelon's readiness for the onset of seasonal cold temperatures and an impending freezing rain and potential ice storm on December 28, 2015. The inspectors reviewed the implementation of adverse weather preparation procedures before the onset of this adverse weather condition. The inspectors walked down the EDGs, the preferred AFW and standby AFW systems, and the service water system to ensure system availability. The inspectors verified that operator actions defined in

Exelon's adverse weather procedures maintained the readiness of essential systems. The inspectors discussed readiness and staff availability for adverse weather response with operations and work control personnel.

b. Findings

No findings were identified.

1R04 Equipment Alignment

Partial System Walkdowns (71111.04Q – 5 samples)

a. Inspection Scope

The inspectors performed partial walkdowns of the following systems:

- 'B' standby AFW on October 6, 2015
- 'B' safety injection (SI) system on November 2, 2015
- Various system locked valves on November 2 and 3, 2015
- AFW system on November 4, 2015
- 'C' SI system on December 23, 2015

The inspectors selected these systems based on their risk significance relative to the reactor safety cornerstones at the time they were inspected. The inspectors reviewed applicable operating procedures, system drawings, the UFSAR, TSs, CAP documents, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have impacted system performance of their intended safety functions. The inspectors also performed field walkdowns of accessible portions of the systems to verify system components and support equipment were aligned correctly and were operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no deficiencies. The inspectors also reviewed whether Exelon staff had properly identified equipment issues and entered them into the CAP for resolution with the appropriate significance characterization.

b. Findings

No findings were identified.

1R05 Fire Protection

Resident Inspector Quarterly Walkdowns (71111.05Q – 5 samples)

a. Inspection Scope

The inspectors conducted tours of the areas listed below to assess the material condition and operational status of fire protection features. The inspectors verified that Exelon controlled combustible materials and ignition sources in accordance with administrative procedures. The inspectors verified that fire protection and suppression equipment was available for use as specified in the area pre-fire plan, and passive fire

barriers were maintained in good material condition. The inspectors also verified that station personnel implemented compensatory measures for out of service, degraded, or inoperable fire protection equipment, as applicable, in accordance with procedures.

- Containment building intermediate level on October 26, 2015
- Containment building basement floor on October 27, 2015
- Containment building operating floor on November 5, 2015
- Auxiliary building basement on November 24, 2015
- 'B' battery room on December 31, 2015

b. Findings

No findings were identified.

1R07 Heat Sink Performance (71111.07A – 1 sample)

a. Inspection Scope

The inspectors reviewed the 'B' component cooling water heat exchanger (HX) to determine its readiness and availability to perform its safety functions. The inspectors reviewed the design basis for the component and verified Exelon's commitments to NRC Generic Letter 89-13, "Service Water System Problems Affecting Safety-Related Equipment," dated July 18, 1989. The inspectors observed actual HX configuration and reviewed the results of the October 17, 2014, test. The inspectors discussed the results of the most recent test with engineering staff and reviewed pictures of the as-found and as-left conditions. The inspectors verified that Exelon initiated appropriate corrective actions for identified deficiencies which include an increased frequency of cleaning and inspection due to service water HX fouling. The inspectors also verified that the number of tubes plugged within the HX did not exceed the maximum amount allowed.

b. Findings

No findings were identified.

1R08 Inservice Inspection Activities (71111.08 – 1 sample)

a. Inspection Scope

From October 26 to November 3, 2015, the inspectors conducted an inspection and review of Exelon staff implementation of inservice inspection (ISI) program activities for monitoring degradation of the reactor coolant system (RCS) boundary, risk-significant piping and components, and containment systems during refueling and maintenance outage (G1R39). The sample selection for this inspection was based on the inspection procedure objectives and risk priority of those pressure-retaining components in systems where degradation would result in a significant increase in risk. The inspectors observed in-process non-destructive examinations (NDEs), reviewed documentation, and interviewed Exelon personnel to verify that the NDE activities performed as part of the fifth interval, second period, of the ISI program were conducted in accordance with the requirements of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, 2004 Edition, No Addenda.

NDE Activities and Welding Activities (Inspection Manual Chapter [IMC] Section 02.01)

The inspectors performed direct observation of NDE activities in process and reviewed documentation of NDEs listed below. Activities included review of ultrasonic testing (UT), radiographic testing (RT), liquid penetrant testing (LPT), and visual examination.

The inspectors reviewed certifications of the NDE technicians performing the examinations and verified that the inspections were performed in accordance with approved NDE procedures and industry guidance. For UT activities, the inspectors also verified the calibration of equipment used to perform the examinations. The inspectors verified that the test results were reviewed and evaluated by certified Level III NDE personnel and that the parameters used in the test were in accordance with the limitations, precautions, and prerequisites specified in the test procedure.

ASME Code Required Examinations

- Documentation review of the manual UT of the steam generator tube sheet-to-shell weld (TSSW-AR) and the lower head-to-tube sheet weld (LHTSW-AR)
- Direct observation of the RT of the pipe-to-pipe welds (1 and 5a) conducted as part of the valve V-4011 replacement in the AFW system
- Documentation review of the LPT of a pipe integral attachment weld (RHU-49) on the residual heat removal (RHR) system

The inspectors independently examined the condition of the containment at all floor elevations including the dome, penetrations, and limited portions of the exposed liner surfaces. The inspectors also examined the leak chase channels and moisture barrier located in the containment basement. The inspectors performed a documentation review of the containment visual examination records and compared those to the inspector walkdowns.

Augmented, License Renewal, or Industry Initiative Examinations

- Documentation review of the manual UT of the main steam line 24B high-energy pipe-to-elbow welds ('B' and 'C') which are part of Ginna's augmented ISI program.

Review of Previous Indications Accepted by Evaluation

During the spring 2011 refueling outage (RFO), Exelon volumetrically examined all 36 of the bottom-mounted instrumentation nozzles on the reactor vessel lower head in accordance with Ginna's ISI program and discovered two recordable indications in bottom-mounted instrumentation penetration nozzle A86. Exelon staff determined that these indications were introduced during original fabrication of the vessel and submitted relief request ISI-06, which proposed an alternative UT re-examination schedule based on an analytical evaluation of the flaws. The NRC staff approved the proposed alternative via a February 22, 2013, letter to Ginna (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13039A292) requiring that Exelon staff perform UT on bottom-mounted instrumentation penetration nozzle A-86 at the end of the fifth 10-year ISI interval while also performing a detailed visual examination of the

outer surface of the lower head every RFO. The inspectors reviewed the results of the visual inspection performed during this outage to verify that Exelon staff were on schedule to complete the successive UT re-examination in accordance with the approved relief request.

Repair/Replacement Activities Including Welding Activities

The inspectors reviewed the repair/replacement package associated with Engineering Change Package (ECP)-15-000245, "Item Equivalency Evaluation for the 3-in Flowserve Gate Valve," Revision 0, which replaced isolation valve V-4011 on the motor-driven AFW pump discharge piping. Specifically, the valve had a body-to-bonnet leak that was slowly trending upwards and could have potentially impacted operations. The inspectors performed a direct observation of the welding activities associated with the pipe-to-pipe field welds to verify that welding and applicable NDE activities were performed in accordance with ASME code requirements.

The inspectors reviewed the weld procedure, welder qualifications, and the radiography data sheets for final acceptance of the welds. The valve replacement was performed under work order (WO) C92812917.

The inspectors also reviewed the repair/replacement package associated with the weld overlay repair of a tee connection downstream of valve V-4561 on the service water discharge piping. Specifically, the tee connection developed a through-wall flaw due to erosion/wall thinning and required corrective action to restore minimum wall thickness in accordance with the ASME code. Exelon staff used ASME Code Case 661-2, "Alternative Requirements for Wall Thickness Restoration of Class 2 and 3 Carbon Steel Piping for Raw Water Service," to perform the weld overlay repair. The inspectors performed a documentation review of the welding activities associated with the overlay to verify that welding and applicable NDE activities were performed in accordance with ASME Code requirements. The inspectors reviewed the weld procedure, welder qualifications and the surface examination results for final acceptance of the weld overlay. The inspectors also performed a walkdown after completion of welding to ensure that the overlay met the conditions of the code case. The repair was performed under WO C93231203.

Pressurized Water Reactor (PWR) Vessel Upper Head Penetration Inspection Activities (IMC Section 02.02)

No head penetration inspections were performed during this RFO.

The inspectors verified that the reactor pressure vessel upper head penetration ultrasonic weld examinations and the bare metal visual examinations were scheduled in accordance with the periodicity requirements of Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a and ASME Code Case N-729-1, "Alternative Examination Requirements for PWR Vessel Upper Heads," to ensure the structural integrity of the reactor vessel head pressure boundary. Because Ginna's upper head was replaced with nozzles and welds made of primary water stress corrosion cracking resistant materials, the examinations do not have to be performed every outage.

Boric Acid Corrosion Control Inspection Activities (IMC Section 02.03)

The inspectors reviewed the boric acid corrosion control program, which is performed in accordance with Exelon procedures, and discussed the program requirements with the boric acid program owner. The inspectors performed walkdowns of various plant areas inside the containment building and reviewed photographic inspection records of several identified boric acid leakage locations. The inspectors determined the leak locations did not involve pressure boundary leakage. The inspectors discussed the evaluation plans for those identified boric acid leaks with Exelon staff and reviewed a sample of action requests (ARs) to verify non-conforming conditions were addressed for resolution within the CAP. Samples were selected based on actions for repair, component function, significance of leakage, and location where direct leakage or impingement on adjacent locations could cause degradation of safety system components.

Steam Generator Tube Inspection Activities (IMC Section 02.04)

No steam generator tube inspections were performed during this RFO.

The inspectors reviewed the steam generator tube inspection report from the previous RFO to confirm that not performing steam generator tube inspections during the current outage was in accordance with TS requirements and Electric Power Research Institute guidelines.

Identification and Resolution of Problems (IMC Section 02.05)

The inspectors reviewed a sample of corrective action reports, which identified NDE indications, deficiencies, and other non-conforming conditions since the previous RFO and during the current outage. The inspectors verified that non-conforming conditions were properly identified, characterized, evaluated, and that corrective actions were identified and entered into the CAP for resolution.

b. Findings

No findings were identified.

1R11 Licensed Operator Regualification Program and Licensed Operator Performance
(71111.11Q – 2 samples; 71111.11A – 1 sample)

.1 Quarterly Review of Licensed Operator Regualification Testing and Training

a. Inspection Scope

The inspectors observed licensed operator simulator training on December 15, 2015, which included a failure of a steam generator level detector, a main feedwater pump trip, a steam generator tube rupture, and a faulted steam generator. The inspectors evaluated operator performance during the simulated event and verified completion of risk-significant operator actions, including the use of abnormal and emergency operating procedures. The inspectors assessed the clarity and effectiveness of communications, implementation of actions in response to alarms and degrading plant conditions, and the oversight and direction provided by the unit supervisor. The inspectors verified the accuracy and timeliness of the emergency classification(s) made by the shift manager

and the TS action statements entered by the unit supervisor. Additionally, the inspectors assessed the ability of the crew and training staff to identify and document crew performance problems.

b. Findings

No findings were identified.

.2 Quarterly Review of Licensed Operator Performance in the Main Control Room

a. Inspection Scope

The inspectors observed and reviewed the unit startup on November 5 and 6, 2015. The inspectors observed pre-shift briefings and reactivity control briefings to verify that the briefings met the criteria specified in procedures HU-AA-1211, "Pre-Job Briefings," Revision 010. Additionally, the inspectors observed test performance to verify that procedure use, crew communications, and coordination of activities between work groups similarly met established expectations and standards.

b. Findings

No findings were identified.

.3 Annual Review

a. Inspection Scope

On December 22, 2015, a region-based inspector conducted an in-office review of results of Exelon-administered annual operating tests for 2015. The inspection assessed whether pass/fail rates were consistent with the guidance of IMC 0609, Appendix I, "Licensed Operator Requalification Significance Determination Process." The review verified that the failure rate (individual or crew) did not exceed 20 percent:

- Zero out of 39 operators failed at least one section of the annual exam; the overall individual failure rate was 0.0 percent
- Zero out of seven crews failed the simulator test; the crew failure rate was 0.0 percent

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12Q – 4 samples)

a. Inspection Scope

The inspectors reviewed the samples listed below to assess the effectiveness of maintenance activities on structure, system, and component (SSC) performance and reliability. The inspectors reviewed CAP documents, and maintenance rule basis documents to ensure that Exelon was identifying and properly evaluating performance problems within the scope of the maintenance rule. For each sample selected, the

inspectors verified that the SSC was properly scoped into the maintenance rule in accordance with 10 CFR 50.65 and verified that the (a)(2) performance criteria established by Exelon staff were reasonable. As applicable, for SSCs classified as (a)(1), the inspectors assessed the adequacy of goals and corrective actions to return these SSCs to (a)(2). Additionally, the inspectors ensured that Exelon staff was identifying and addressing common cause failures that occurred within and across maintenance rule system boundaries.

- Instrument air on October 9, 2015
- Nuclear instrumentation – source range detectors on November 23, 2015
- Containment isolation valves on December 22, 2015
- Turbine generator on December 30, 2015

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 – 5 samples)

a. Inspection Scope

The inspectors reviewed station evaluation and management of plant risk for the maintenance and emergent work activities listed below to verify that Exelon performed the appropriate risk assessments prior to removing equipment from service. The inspectors selected these activities based on potential risk significance relative to the reactor safety cornerstones. As applicable for each activity, the inspectors verified that Exelon personnel performed risk assessments as required by 10 CFR 50.65(a)(4) and that the assessments were accurate and complete. When Exelon performed emergent work, the inspectors verified that operations personnel promptly assessed and managed plant risk. The inspectors reviewed the scope of maintenance work and discussed the results of the assessment with the station's probabilistic risk analyst to verify plant conditions were consistent with the risk assessment. The inspectors also reviewed the TS requirements and inspected portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met.

- Planned maintenance on the 'C' standby AFW system on October 8, 2015
- Technical support center inverter preventive maintenance on November 9, 2015
- Planned turbine-driven AFW testing on November 16 and 17, 2015
- Planned maintenance on the 'A' charging pump on December 15, 2015
- Planned bus 16 and 17 undervoltage testing on December 21, 2015

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15 – 4 samples)a. Inspection Scope

The inspectors reviewed operability determinations for the following degraded or non-conforming conditions based on the risk significance of the associated components and systems:

- RHR seal cooler leaking on October 1, 2015
- 'D' standby AFW check valve leaking on October 7, 2015
- Turbine-driven AFW pump high vibrations on November 16 to 18, 2015
- 'B' SI accumulator check valve leaking on December 21, 2015

The inspectors selected these issues based on the risk significance of the associated components and systems. The inspectors evaluated the technical adequacy of the operability determinations to assess whether TS operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors compared the operability and design criteria in the appropriate sections of the TSs and UFSAR to Exelon's evaluations to determine whether the components or systems were operable. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled by Exelon. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations.

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18 – 1 sample)Permanent Modificationa. Inspection Scope

The inspectors evaluated a structural modification to the 'B' RHR pump. The inspectors verified that the design bases, licensing bases, and performance capability of the affected system(s) were not degraded by the modification. In addition, the inspectors reviewed modification documents associated with the upgrade and design change that included the removal of existing bearing housing support and installation of a new bearing housing support. The 'B' RHR pump had a vibration issue that was initially solved in 2009 by adding rigidity to the bearing housing support. A subsequent increase in vibrations led to the installation of a new flexible disc coupling which resulted in historically low vibrations. However, a surveillance test on May 27, 2015, revealed the vibrations had increased to the established inservice test alert range requiring Exelon to re-evaluate and find a way to lower the vibrations to acceptable levels. The inspectors witnessed the installation of the new bearing housing support and acceptance testing.

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19 – 6 samples)a. Inspection Scope

The inspectors reviewed the post-maintenance tests for the maintenance activities listed below to verify that procedures and test activities ensured system operability and functional capability. The inspectors reviewed the test procedure to verify that the procedure adequately tested the safety functions that may have been affected by the maintenance activity, that the acceptance criteria in the procedure were consistent with the information in the applicable licensing basis and/or design basis documents, and that the procedure had been properly reviewed and approved. The inspectors also witnessed the test or reviewed test data to verify that the test results adequately demonstrated restoration of the affected safety functions.

- RHR seal cooler replacement on October 15, 2015
- Bus 18 breaker unplanned maintenance on October 20, 2015
- Alternate RCS injection system operational pressure test and full flow demonstration on October 26 and 27, 2015
- 'C' and 'D' standby AFW planned maintenance on November 3, 2015
- Turbine-driven AFW following turbine rolling assembly replacement on November 5, 2015
- Turbine-driven AFW permanent modification on December 1, 2015

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities (71111.20 – 1 sample)a. Inspection Scope

The inspectors reviewed the station's work schedule and outage risk plan for the maintenance and RFO (G1R39) conducted October 18 through November 8, 2015. The inspectors reviewed Exelon's development and implementation of outage plans and schedules to verify that risk, industry experience, previous site-specific problems, and defense-in-depth were considered. During the outage, the inspectors observed portions of the shutdown and cooldown processes and monitored controls associated with the following outage activities:

- Configuration management, including maintenance of defense-in-depth, commensurate with the outage plan for the key safety functions and compliance with the applicable TSs when taking equipment out of service
- Implementation of clearance activities and confirmation that tags were properly hung and that equipment was appropriately configured to safety support the associated work or testing

- Installation and configuration of reactor coolant pressure, level, and temperature instruments to provide accurate indication and instrument error accounting
- Status and configuration of electrical systems and switchyard activities to ensure that TSs were met
- Monitoring of decay heat removal operations
- Impact of outage work on the ability of the operators to operate the spent fuel pool cooling system
- Reactor water inventory controls, including flow paths, configurations, alternative means for inventory additions, and controls to prevent inventory loss
- Activities that could affect reactivity
- Maintenance of containment as required by TSs
- Refueling activities, including fuel handling and fuel receipt inspections
- Fatigue management
- Tracking of startup prerequisites, walkdown of containment to verify that debris had not been left which could block the emergency core cooling system suction strainers, and startup and ascension to full power operation
- Identification and resolution of problems related to RFO activities

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22 – 4 samples)

a. Inspection Scope

The inspectors observed performance of surveillance tests and/or reviewed test data of selected risk-significant SSCs to assess whether test results satisfied TSs, the UFSAR, and Exelon procedure requirements. The inspectors verified that test acceptance criteria were clear, tests demonstrated operational readiness and were consistent with design documentation, test instrumentation had current calibrations and the range and accuracy for the application, tests were performed as written, and applicable test prerequisites were satisfied. Upon test completion, the inspectors considered whether the test results supported that equipment was capable of performing the required safety functions. The inspectors reviewed the following surveillance tests:

- STP-O-R-10.3, Preparation for and Performance of Main Steam Safety Valve Test Using Set Point Verification Device on October 16, 2015 (inservice test)
- STP-O-R-2.2, Diesel Generator Load and Safeguard Sequence Test on October 20, 2015
- STP-O-22.1, Local Leak Rate Test of Equipment Hatch Door Seal on November 1, 2015 (isolation valve)
- Containment leak rate summary and total leakage on December 22, 2015 (isolation valve)

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP4 Emergency Action Level and Emergency Plan Changes (71114.04 – 1 sample)

a. Inspection Scope

Exelon implemented various changes to Ginna's emergency action levels (EALs), Emergency Plan, and implementing procedures. Exelon determined that, in accordance with 10 CFR 50.54(q)(3), changes made to the EALs, Emergency Plan, and its lower-tier implementing procedures, had not resulted in any reduction in effectiveness of the Plan, and that the revised Plan continued to meet the standards in 50.47(b) and the requirements of 10 CFR 50, Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities."

The inspectors performed an in-office review of all EAL and Emergency Plan changes submitted by Exelon as required by 10 CFR 50.54(q)(5), including the changes to lower-tier Emergency Plan implementing procedures, to evaluate for any potential reductions in effectiveness of the Plan. This review by the inspectors was not documented in an NRC Safety Evaluation Report and does not constitute formal NRC approval of the changes. Therefore, these changes remain subject to future NRC inspection in their entirety. The requirements in 10 CFR 50.54(q) were used as reference criteria.

b. Findings

No findings were identified.

1EP6 Drill Evaluation (71114.06 – 2 samples)

.1 Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors evaluated the conduct of a routine Exelon emergency preparedness drill on October 6, 2015, to identify any weaknesses and deficiencies in the classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the simulator and emergency operations facility to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures. The inspectors also attended the station drill critique to compare inspector observations with those identified by Exelon staff in order to evaluate Exelon's critique and to verify whether Exelon was properly identifying weaknesses and entering them into the CAP.

b. Findings

No findings were identified.

.2 Training Observations

a. Inspection Scope

The inspectors observed a simulator training evolution for Exelon licensed operators on December 15, 2015, which required Emergency Plan implementation by an operations crew. Exelon planned for this evolution to be evaluated and included in performance indicator (PI) data regarding drill and exercise performance. The inspectors observed event classification and notification activities performed by the crew. The inspectors also attended the post-evolution critique for the scenario. The focus of the inspectors' activities was to note any weaknesses and deficiencies in the crew's performance and ensure that Exelon evaluators noted the same issues and entered them in the CAP.

b. Findings

No findings were identified.

2. **RADIATION SAFETY**

Cornerstone: Public Radiation Safety and Occupational Radiation Safety

2RS1 Radiological Hazard Assessment and Exposure Controls (71124.01 – 1 sample)

a. Inspection Scope

The inspectors reviewed Exelon's performance in assessing and controlling radiological hazards in the workplace. The inspectors used the requirements contained in 10 CFR 20, "Standards for Protection Against Radiation"; TSs; applicable regulatory guides; and the procedures required by TSs as criteria for determining compliance.

Inspection Planning

The inspectors reviewed the PIs for the occupational exposure cornerstone, radiation protection program audits, and reports of operational occurrences in occupational radiation safety since the last inspection.

Radiological Hazard Assessment

The inspectors reviewed recent plant radiation surveys and any changes to plant operations since the last inspection to identify any new radiological hazards for onsite workers or members of the public.

Instructions to Workers

The inspectors observed several containers of radioactive materials and assessed whether the containers were labeled and controlled in accordance with requirements.

The inspectors reviewed several occurrences where a worker's electronic personal dosimeter alarmed. The inspectors reviewed Exelon's evaluation of the incidents, documentation in the CAP, and whether compensatory dose evaluations were conducted when appropriate.

Contamination and Radioactive Material Control

The inspectors observed the monitoring of potentially contaminated material leaving the radiological control area, and inspected the methods and radiation monitoring instrumentation used for control, survey, and release of that material. The inspectors selected several sealed sources from inventory records and assessed whether the sources were accounted for and were tested for loose surface contamination. The inspectors evaluated whether any recent transactions involving nationally tracked sources were reported in accordance with requirements.

Radiological Hazards Control and Work Coverage

The inspectors evaluated in-plant radiological conditions and performed independent radiation measurements during facility walkdowns and observation of radiological work activities. The inspectors assessed whether posted surveys, radiation work permits, worker radiological briefings, the use of continuous air monitoring, and dosimetry monitoring were consistent with the present conditions. The inspectors examined the control of highly activated or contaminated materials stored within the spent fuel pools, and the posting and physical controls for selected high radiation areas (HRAs), locked high radiation areas (LHRAs), and very high radiation areas (VHRAs) to verify conformance with requirements and with the occupational PI.

Risk-Significant HRA and VHRA Controls

The inspectors reviewed the controls and procedures for HRAs, VHRAs, and radiological transient areas in the plant.

Problem Identification and Resolution

The inspectors evaluated whether problems associated with radiation monitoring and exposure control were identified at an appropriate threshold and properly addressed in the CAP.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151 – 2 samples)

.1 Occupational Exposure Control Effectiveness

a. Inspection Scope

The inspectors reviewed Exelon's submittals for the occupational exposure control effectiveness (OR01) PI for the period of July 1, 2014, through September 30, 2015. The inspectors used the PI definitions and guidance contained in Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7, to determine the accuracy of the PI data reported.

The inspectors reviewed electronic personal dosimetry accumulated dose alarms, dose reports, and dose assignments for any intakes that occurred during the time period reviewed to determine if there were potentially unrecognized PI occurrences. The inspectors conducted walkdowns of various LHRA and VHRA entrances to determine the adequacy of the controls in place for these areas.

b. Findings

No findings were identified.

.2 Radiological Effluent TS/Offsite Dose Calculation Manual (ODCM) Radiological Effluent Occurrences

a. Inspection Scope

The inspectors reviewed Exelon's submittals for the radiological effluent TS/ODCM radiological effluent occurrences (PR01) for the period of July 1, 2014, through September 30, 2015. The inspectors used PI definitions and guidance contained in NEI 99-02, Revision 7, to determine if the PI data were reported properly. The inspectors reviewed the public dose assessments for the PI for public radiation safety to determine if related data were accurately calculated and reported.

The inspectors reviewed the CAP database to identify any potential occurrences such as unmonitored, uncontrolled, or improperly calculated effluent releases that may have impacted offsite dose. The inspectors reviewed gaseous and liquid effluent summary data and the results of associated offsite dose calculations to determine if indicator results were accurately reported.

b. Findings

No findings were identified.

40A2 Problem Identification and Resolution (71152 – 4 samples)

.1 Routine Review of Problem Identification and Resolution Activities

a. Inspection Scope

As required by Inspection Procedure 71152, "Problem Identification and Resolution," the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that Exelon entered issues into the CAP at an appropriate threshold, gave adequate attention to timely corrective actions, and identified and addressed adverse trends. In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the CAP and periodically attended AR screening meetings.

b. Findings

No findings were identified.

.2 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a semi-annual review of site issues, as required by Inspection Procedure 71152, to identify trends that might indicate the existence of more significant safety issues. In this review, the inspectors included repetitive or closely related issues that may have been documented by Exelon outside of the CAP such as trend reports, PIs, major equipment problem lists, system health reports, maintenance rule assessments, and maintenance or CAP backlogs. The inspectors also reviewed Exelon's CAP database for the third and fourth quarters of 2015 to assess ARs written in various subject areas (equipment problems, human performance issues, etc.) as well as individual issues identified during the NRC's daily AR review (Section 40A2.1). The inspectors reviewed Exelon's trend ARs for the third and fourth quarters of 2015 to verify that Exelon personnel were appropriately evaluating and trending adverse conditions in accordance with applicable procedures.

b. Findings and Observations

No findings were identified.

The inspectors evaluated a sample of issues and events that occurred over the course of the third and fourth quarters of 2015 to determine whether issues were appropriately considered as emerging or adverse trends. The inspectors verified that these issues were addressed within the scope of the CAP or through department review.

The evaluation did not reveal any new trends that could indicate a more significant safety issue. The inspectors assessed that Exelon personnel were identifying trend issues at a low threshold and entering them into the CAP for resolution and were appropriately prioritizing investigation reviews. The inspectors noted minor adverse trends identified by Exelon staff in the areas of WO package managing/handling (AR 02587034), deficiencies in valve locking devices (AR 02584822), inadequate documentation in work group evaluations (AR 02572159), rod control cabinet high-temperature alarms (AR 02572144), transient combustibles hot work (AR 02572066), operations low-level procedural challenges (AR 02553805), attempting to enter vital area without access (AR 02535842), inservice test program pump differential pressure (AR 02532266), 'C' instrument air compressor issues (AR 02529695), and radiation monitor system performance (AR 02561777). The inspectors also noted that Exelon's nuclear oversight organization continued to identify negative trends at an appropriate level and elevated issues when necessary.

There were no adverse safety consequences as a result of these low-level trend issues. Based on the overall results of the semi-annual trend review, the inspectors determined that Exelon was properly identifying adverse trends at Ginna before they became more significant safety problems. 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 these conditions were deficiencies of minor significance and, therefore, are not subject to enforcement action in accordance with the NRC's Enforcement Policy.

.3 Annual Sample: Standby AFW Multiple Check Valve Failures

a. Inspection Scope

The inspectors performed an in-depth review of Exelon's evaluations and corrective actions associated with a November 11, 2014, full-flow test of the 'C' standby AFW pump. Specifically, at the conclusion of the test and immediately following a manual shutdown of the pump, multiple check valves did not satisfactorily function to fully close, which allowed high-temperature feedwater to reach the pump suction piping and actuate the 150 psig relief valve. In addition, the inspectors evaluated Exelon's actions, including their extent-of-condition review that evaluated the configuration and testing of the main AFW system.

The inspectors assessed Exelon's problem identification threshold, problem analyses, extent-of-condition reviews, compensatory actions, and the prioritization and timeliness of Exelon's corrective actions to determine whether Exelon was appropriately identifying, characterizing, and correcting problems associated with this issue and whether the planned or completed corrective actions were timely and appropriate. The inspectors compared the actions taken to the requirements of Exelon's CAP and 10 CFR 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants." The inspectors interviewed engineering personnel to assess the effectiveness of the planned and implemented corrective actions. In addition, the inspectors performed a walkdown of the affected components and observed portions of the revised full-flow testing procedure that was performed on October 6, 2015, (on the redundant 'D' standby AFW pump) to evaluate the effectiveness of Exelon's corrective actions.

b. Findings and Observations

No findings were identified.

The inspectors found that although Exelon did not conclusively determine the cause of the three discharge check valves' inability to fully close, the associated analyses were thorough and technically reasonable, which included an independent analysis by an engineering consultant. Exelon determined that the apparent cause was the rapid closure of a new 4-inch nozzle-style check valve in the suction piping common to both the 'C' and 'D' standby AFW pumps. This created a hydraulic condition that halted system flow and, consequently, trapped system pressure and interfered with the expected closure of the three discharge line check valves. In particular, the rapid closure of the suction nozzle check valve, in combination with the test configuration in which the discharge valve remained open following the pump shutdown, created the hydraulic condition where there was a relatively low-flow rate in the reverse direction from the steam generator when the standby AFW pump was secured. Exelon's review of operating experience concluded that the three tandem check valves needed some amount of reverse flow assistance to fully seat. The three discharge check valves consisted of two Y-patterned lift check valves (with an internal spring) and a Y-patterned stop check valve.

The 4-inch nozzle-style check valve was installed around July 2014 as part of a modification associated with the standby AFW suction piping and suction sources. The November 2014 test was the first time a full-flow test was conducted on either standby AFW train subsequent to the installation of the fast-acting suction nozzle check valve. That test was part of the overall turnover of the modification prior to crediting the modified standby AFW system. The full-flow test procedure used for the November 2014 test maintained the discharge valve open after operators shut down the 'C' standby AFW pump.

In response to the suction relief valve lifting, which allowed high-temperature feedwater to backflow to the standby AFW suction piping until operators closed both the discharge valve and the discharge stop check valve, Exelon implemented several corrective actions. The immediate actions included evaluating the mechanical and electrical components in the standby AFW system due to the high-temperature feedwater (and steam), and completing a visual inspection of the system piping and supports. No adverse consequences or conditions were identified. The discharge check valve located closest to the standby AFW pump was disassembled and inspected, and the discharge valve was externally inspected; no evidence of degradation was identified. In addition, the full-flow test procedure was modified to place the standby AFW system on recirculation and then close the discharge valve prior to shutting down the pump, which could prevent a similar hydraulic condition. In the standby AFW system's normal operating condition, the discharge valve is designed to automatically close upon standby AFW pump shutdown, providing an automatic means to isolate the discharge piping.

In addition, the most downstream discharge check valves on both standby AFW trains (9705A and 9705B), which are located inside containment, were inspected (and repaired or replaced, as necessary) during the RFO to further evaluate the valves' internal conditions. Both trains were included in this activity because train 9705B was slow to fully close following the full-flow test on the 'D' standby AFW train on October 6, 2015. Exelon plans to evaluate the benefit of providing check valve diversity with a different type (e.g., swing check) in the standby AFW discharge piping to provide assurance of proper operation.

The inspectors observed that while Exelon's actions included evaluating the use of a different check valve design, Exelon did not specifically evaluate potential design weaknesses, such as an undersized spring in the Y-patterned check valves. Notwithstanding, the inspectors concluded that Exelon's overall response to this event, including their completed and planned corrective actions, was appropriate and timely.

.4 Annual Sample: Control of Locked Valve and Breaker Operation

a. Inspection Scope

The inspectors performed an in-depth review of Exelon's corrective actions associated with performance of station procedure A-52.2, "Control of Locked Valves and Breaker Operation," Revision 01680. Specifically, during the RFO (G1R39), the inspectors identified several locked valves were not locked in accordance with procedure A-52.2 resulting in the initiation of multiple ARs.

The inspectors assessed Exelon's problem identification threshold, and the prioritization and timeliness of Exelon's corrective actions to determine whether Exelon was

appropriately identifying, characterizing, and correcting problems associated with this issue and whether the completed corrective actions were appropriate. The inspectors compared the actions taken to the requirements of Exelon's CAP and 10 CFR 50, Appendix B. In addition, the inspectors performed field walkdowns and interviewed operations personnel to assess the effectiveness of the implemented corrective actions.

b. Findings and Observations

No findings were identified.

Exelon determined that the most probable cause of valves not locked in accordance with procedure A-52.2 was inadequate operator procedure performance. Ginna operations management briefed equipment operators on using A-52.2 during locked valve operations and had operators verify that all accessible locked valves were locked in accordance with the procedure. Specifically, chains and locking devices were slack enough to allow some movement of the valve handwheel. When subsequent inspector walkdowns found valves not locked in accordance with A-52.2, Exelon chose to revise the procedure. The revision relaxed valve lock and chain requirements and made some of the previously identified locked valves to be in accordance with procedure A-52.2.

The issue of locked valves not in accordance with procedure A-52.2 is a performance deficiency. The inspectors evaluated the performance deficiency for significance in accordance with the guidance in IMC 0612, Appendix B, "Issue Screening," and Appendix E, "Examples of Minor Issues." This issue was determined to be minor because all locking devices were in place and still provided adequate controls to prevent excessive movement and inadvertent repositioning of the valve so the valves would still be considered locked. Furthermore, containment or the ability to achieve containment was not affected. In accordance with IMC 0612, "Power Reactor Inspection Reports," this issue constituted a violation of minor significance that is not subject to enforcement action in accordance with the NRC Enforcement Policy. Exelon entered the inspectors' observations into their CAP as ARs 02581883, 02581888, 02581892, 02581894, 02581910, 02581911, 02581913, 02581916, 02581917, 02581918, 02581920, 02581921, and 02582014.

.5 Annual Sample: Inadvertent Actuation of 'A' Train Safety Injection

a. Inspection Scope

The inspectors performed an in-depth review of Exelon's apparent cause analysis and corrective actions associated with AR 02574211, "Inadvertent Actuation of 'A' Train SI during Surveillance Testing." Specifically, on October 21, 2015, an 'A' train SI signal was inadvertently produced by an equipment operator taking resistance readings across relay SI-10X contacts. The readings were taken as part of a restoration activity in accordance with STP-O-R-2.2, "Diesel Generator Load and Safeguard Sequence Test," Revision 00901. The inadvertent SI signal caused an EDG start that required NRC notification (Event Notification 51604).

The inspectors assessed Exelon's problem identification threshold, cause analyses, extent-of-condition reviews, operator actions following SI signal, and the prioritization and timeliness of Exelon's corrective actions to determine whether Exelon was appropriately identifying, characterizing, and correcting problems associated with this

issue and whether the planned corrective actions were appropriate. The inspectors compared the actions taken to the requirements of Exelon's CAP and 10 CFR 50, Appendix B. In addition, the inspectors interviewed maintenance and operations personnel to assess the likelihood of a similar event occurring in the future.

b. Findings and Observations

No findings were identified.

Exelon determined that the most probable cause was the use of multi-meter probes with approximately 3/4-inch exposed conductor at their tip. The probes caused either a connection across adjacent relay points, given their large area of exposed conductor, or were inserted beyond the relay screw head and pushed down on the internal movable armature causing all of the contacts on the relay to move to their energized positions. Both of these conditions would produce an SI signal; had operators used probes configured with plastic sheaths, significantly reducing the exposed conductor, neither condition would be possible.

Exelon conducted a thorough cause-and-effect analysis including the effect of physical, administrative, and people barriers that could have either contributed to or caused the inadvertent SI signal. Operations personnel found that a number of procedures use multi-meters for testing continuity across relays and do not specify using probes with installed plastic sheaths. Corrective actions included revising all operations test procedures that use multi-meters to specify the correct type of probe and including a risk of error statement; training equipment operators on operations test procedures, multi-meter usage, correct probe selection, and risk of error; and determining industry standards on equipment operator usage of multi-meters.

The inspectors reviewed the effect of the inadvertent SI signal on plant safety and determined that because Ginna was in Mode 5 (cold shutdown) with SI paths to the RCS in a recirculation configuration, there was no effect on decay heat removal and no significant decrease to plant safety. The inspectors determined Exelon's overall response to the issue was commensurate with the safety significance, was timely, and included appropriate corrective actions. The inspectors determined that the actions taken were reasonable to resolve both the initial inadvertent SI signal and minimize the risk of another common cause inadvertent SI signal.

However, the inspectors' review of previous events revealed that during Exelon's apparent cause, AR 02483272, "Selection of the Improper Tool for an Activity Led to Shorting an Energized Lead, Resulting in an Unplanned Entry into a 72-Hour LCO," Exelon did not consider equipment operators. Specifically, Exelon did not consider including equipment operators as individuals that may perform work on energized leads for training regarding the importance of selecting the proper tool, and the risk associated with shorting energized leads.

The inspectors evaluated the performance deficiency for significance in accordance with the guidance in IMC 0612, Appendix B, "Issue Screening," and Appendix E, "Examples of Minor Issues." This issue is considered minor because the effected equipment had been properly removed from service prior to the test and/or was considered inoperable at the time of the event. As a result, there was no plant transient and no safety functions were adversely impacted due to the inadvertent SI actuation. In accordance with IMC

0612, this issue constituted a violation of minor significance that is not subject to enforcement action in accordance with the NRC Enforcement Policy.

4OA5 Other Activities

Follow-Up Inspection for a Severity Level (SL) III Traditional Enforcement Notice of Violation (NOV) EA-14-235 (Inspection Procedure 92702)

a. Inspection Scope

The inspectors performed a follow-up inspection for this SL III Traditional Enforcement NOV (EA-14-235). On February 24, 2015, the NRC issued a SL III NOV to Exelon for an issue involving two related violations identified during an inspection at Ginna (ADAMS Accession No. ML15055A080). The first violation involved Exelon's submittal of information to the NRC in an October 8, 2008, NRC licensed senior operator application that was not complete and accurate in all material respects. Based, in part, on this inaccurate information, the NRC issued an initial license that did not contain a necessary restriction. The second violation involved Exelon's failure to notify the NRC within 30 days of a permanent disability of a licensed senior operator. Specifically, Ginna did not report a known condition to the NRC when they submitted NRC Form 396 as part of the licensed senior operator's application in October 2008, and during subsequent biennial requalification medical examinations in 2010 and 2012. Ginna also did not request an amended license with a condition to account for the medical issue until July 2014.

The NRC concluded that both violations occurred as a result of contract medical personnel's failing to follow Exelon's prescribed processes. Accordingly, these violations were categorized collectively as a SL III problem to emphasize the importance of providing suitable training, oversight, and focus on licensed operator medical requirements.

In accordance with NRC Inspection Procedure 92702, "Follow-Up on Traditional Enforcement Actions Including Violations, Deviations, Confirmatory Action Letters, Confirmatory Orders, and Alternate Dispute Resolution Confirmatory Orders," follow-up inspection is conducted on all traditional enforcement violations.

The objectives of this inspection were to determine whether Exelon staff:

- Implemented adequate corrective actions
- Identified the root cause(s) of the NOV
- Addressed any generic implications
- Appropriately enhanced the station's programs and practices to prevent recurrence

The inspectors conducted an in-office review of Exelon's evaluation and actions taken as a result of the NOV. Additionally, the inspectors interviewed management and staff personnel who were familiar with the violation and participated in the evaluation of corrective actions.

b. Findings and Observations

No findings were identified.

The inspectors concluded that Exelon staff completed a timely and adequate evaluation that used a systematic method to identify the causes of the traditional enforcement violation. Exelon personnel conducted an investigation into the causes of the violation and conducted interviews with relevant station personnel and contractors when possible.

The medical condition was properly reported to the medical staff, properly evaluated, and the physician determined that the condition was being treated and managed appropriately. The medical staff concluded the operator was fit for duty since he met the medical requirements when tested. However, the staff did not recognize the condition was still required to be reported to the NRC and a condition needed to be added to the license to ensure the operator remained fit for duty. Corrective actions included additional training for site medical personnel and regulatory assurance personnel, training for operators and security personnel on requirements to promptly report to site medical when medications are prescribed or changed, participation by medical personnel in industry seminars, and additional reviews of licensing applications by Exelon corporate medical personnel and the applicants themselves.

The inspectors determined that the station adequately assessed the extent-of-condition and extent-of-cause of the violations. The inspectors concluded that Exelon's actions were sufficient to address the identified cause and that the completed and planned corrective actions addressed the causes described in the evaluation. EA-14-235 is closed.

4OA6 Meetings, Including Exit

On January 19, 2016, the inspectors presented the inspection results to Mr. Joseph Pacher, Site Vice President, and other members of the Ginna staff. The inspectors verified that no propriety information was retained by the inspectors or documented in this report.

ATTACHMENT: SUPPLEMENTARY INFORMATION

SUPPLEMENTARY INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

J. Pacher, Site Vice President
W. Carsky, Plant Manager
D. Blankenship, Director, Site Operations
J. Bowers, Radiation Protection General Supervisor
R. Everett, Director, Site Engineering
K. Garnish, Senior Manager, Operations Support and Services
K. Gould, Manager, Radiation Protection
T. Harding, Manager, Site Regulatory Assurance
J. Jackson, Director, Emergency Preparedness
F. Klepacki, ISI Program Owner
R. Marcello, Boric Acid Program Owner
L. Mireles, Operations Instructor-Lead
P. Swift, Director, Site Work Management
S. Wihlen, Director, Site Maintenance

LIST OF ITEMS OPENED, CLOSED, DISCUSSED, AND UPDATED

Closed

05000244/2015007-01	NOV	Incomplete/Inaccurate Medical Information Resulted in Issuance of an Initial Senior Operator License Without a Required Medical Restriction and Failure to Report a Permanent Change in Medical Status (Section 40A5)
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LIST OF DOCUMENTS REVIEWED**Section 1R01: Adverse Weather Protection**Procedures

EPIP-1-17, Planning for Adverse Weather, Revision 01000
 ER-SC.1, Adverse Weather Plan, Revision 02100
 O-22, Cold Weather Walkdown Procedure, Revision 01600
 OP-AA-108-111-1001, Severe Weather and Natural Disaster Guidelines, Revision 013
 WC-AA-107, Seasonal Readiness, Revision 016

Action Requests

02594358	02594372	02602730	02602821
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Miscellaneous

UFSAR

Section 1R04: Equipment AlignmentProcedures

A-52.2, Control of Locked Valve and Breaker Operation, Revision 16600
 S-16A, Safety Injection System Alignment, Revision 08000
 STP-O-30.1, Safety Injection System Valve and Breaker Position Verification, Revision 00105
 STP-O-30.4, Auxiliary Feedwater System Valve and Breaker Position Verification, Revision 00402
 T-41A, Alignment of Auxiliary Feedwater System Prior to Power Operation, Revision 08301
 T-44.2, Standby Auxiliary Feedwater System Alignment for Normal Operation, Revision 03600

Drawings

33013-1237, Auxiliary Feedwater Piping and Instrumentation Drawing (P&ID), Revision 69
 33013-1238, Standby Auxiliary Feedwater P&ID, Revision 34
 33013-1250, Station Service Cooling Water Safety-Related P&ID, Revision 49, Sheet 2 of 3
 33013-1262, Safety Injection and Accumulators P&ID, Revision 33, Sheet 1 of 2

Action Requests

02581576	02581580	02581883	02581888
02581892	02581894	02581910	02581911
02581913	02581916	02581917	02581918
02581920	02581921	02582014	02582183
02582187			

Miscellaneous

UFSAR

Section 1R05: Fire Protection

Procedures

FRP-1.0, Containment Basement, Revision 00601
FRP-2.0, Containment Intermediate Floor, Revision 00701
FRP-3.0, Containment Operating Floor, Revision 00701
FRP-4.0, Auxiliary Building Basement, Revision 00802
FRP-18.0, Battery Room 'B', Revision 00601

Drawings

21488-0102, Battery Room 'B' North Wall Section A-A Penetration Locations Floor Elevation
253 feet 6 inches, Revision 005, Sheet 1
21488-0102, Battery Room 'B' West Wall Elevation Penetration Locations Floor Elevation
253 feet 6 inches, Revision 012, Sheet 2
33013-2542, Fire Response Plan Containment Structure and Intermediate Building Plan –
Basement Floor Elevation 235 feet 8 inches, Revision 005
33013-2545, Fire Response Plan Containment Structure and Intermediate Building Plan
Intermediate Floor Elevation 253 feet 3 inches, Revision 009
33013-2551, Fire Response Plan Containment Structure and Intermediate Building Plan
Operation Floor Elevation 278 feet 4 inches and 274 feet 6 inches, Revision 006
33013-1559, Fire Response Plan Control Building, Revision 013
33013-2543, Fire Response Plan Auxiliary building Basement Floor Elevation 235 feet 8 inches,
Revision 008

Miscellaneous

DA-ME-98-004, Combustible Loading Analysis, Revision 14

Section 1R07: Heat Sink Performance

Work Order

C92453924

Section 1R08: Inservice Inspection Activities

Procedures

EP-PT-106, Liquid Penetration Examinations, Revision 00400
EP-RT-104, Radiographic Examination of Power Piping, Vessel Welds and Associated
Attachments, Revision 00100
EP-UT-209, Manual Ultrasonic Examination of Ferritic Pressure Piping Welds, Revision 00201
EP-VT-103, Visual Examination of Welds, Revision 00201
EP-VT-105, Visual Examination of Equipment and Components, Revision 00301
EP-VT-112, Visual Examination of Class MC and Metallic Liners of Class CC Components (IWE),
Revision 00301
ER-AA-330, Conduct of Inservice Inspection Activities, Revision 011
ER-AA-330-009, ASME Section XI Repair-Replacement Program, Revision 010
ER-AP-331, Boric Acid Corrosion Control Program, Revision 007
ER-AP-331-1002, Boric Acid Corrosion Control Program Identification, Screening, and Evaluation,
Revision 008

IP-CAP-1.9, Boric Acid Leakage Initial Investigation Form, Revision 00902
M-73.10, Welding and Brazing, Revision 03000

Drawings

33013-1237, Auxiliary Feedwater P&ID, Revision 069
33013-1250, Station Service Cooling Water Safety Related P&ID, Revision 039, Sheet 3
33013-2936, ISI Containment Dome Liner VT-3 Inspection, Revision 000
7705E188, Tube Sheet and Primary Head Assembly, Revision 002
7705E189, Secondary Shell Tube Sheet and Primary Head Assembly, Revision 003
C381-0352, Auxiliary Feedwater Pump Discharge Intermediate Building, Revision 009, Sheet 2
D-421-003, Reactor Containment Vessel Basement Floor Slab Elevation 235 feet 8 inches,
Revision 010
HE-7A, Main Steam - High Energy, Revision 006

Action Requests

01704668	01962961	02390654	02514581
02573368	02573441	02574975	02576330
02580126			

Work Orders

C92757707	C92812917	C92972823	C92994292
C92994293	C93231203		

Miscellaneous

2014 Activity Report for RFO-38 Inservice Examinations dated August 12, 2014
2014 Steam Generator Tube Inspection Report dated November 13, 2014
06GU013, UT Data Report for HE-7A-B dated October 12, 2006
15GP001, PT Data Report for RHU-49 (IA) dated October 22, 2015
15GU003, UT Data Report for HE-7A-C dated October 23, 2015
15GU006, UT Data Report for HE-7A-B dated October 24, 2015
15GU007, UT Data Report for LHTSW-AR (Weld 22) dated October 25, 2015
15GU008, UT Data Report for TSSW-AR (Weld 77) dated October 25, 2015
15GU009, UT Data Sheet for Containment Liner dated October 30, 2015
15GV324, Visual Examination Data Report for Containment Leak Chase Channels dated
October 25, 2015
15GV327/8/9, Visual Examination Data Reports for Containment Moisture Barrier dated
October 24, 2015
BOP-RT-15-023, RT Data Report for Weld 1 on V-4011 dated October 29, 2015
BOP-RT-15-024, RT Data Report for Weld 5a on V-4011 dated October 29, 2015
BOP-VT-15-150, Visual Examination Data Report for Containment Dome Trend Areas dated
October 21, 2015
ECP-15-000245, Item Equivalency Evaluation for the 3-in Flowserve Gate Valve, Revision 0
Fifth 10-Year ISI Plan, Revision 04
ISI Program Health Report for May 1 to August 31, 2015
Second 10-Year Containment ISI Plan, Revision 01
Weld Traveler GNA-1-2015-0106, Welds Associated with V-4011 Replacement dated
October 27, 2015
Welding Procedure Specification 100-04, Gas Tungsten and Shielded Metal Arc Welding of
Carbon Steel, Revision 5

Section 1R11: Licensed Operator Requalification Program and Licensed Operator Performance

Procedure

HU-AA-1211, Pre-Job Briefings, Revision 010

Miscellaneous

Exelon Generation R. E. Ginna Nuclear Power Plant Examination Scenario, Faulted/Ruptured Steam Generator, Revision 12

Section 1R12: Maintenance Effectiveness

Procedures

ER-AA-310-1003, Maintenance Rule – Performance Criteria Selection, Revision 004
ER-AA-310-1004, Maintenance Rule – Performance Monitoring, Revision 013
ER-AA-310-1005, Maintenance Rule – Dispositioning Between (a)(1) and (a)(2), Revision 007

Action Request

01701237	01701329	01956865	01961187
01962446	01962840	02553584	02523938
02572973	02574307	02575674	02584317
02584862			

Condition Reports

2013-000281	2013-006321	2014-001213
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Miscellaneous

EVAL-G-87-03830
EVAL-G-87-04310
Maintenance Rule Basis Document
Vulnerability Review for Nuclear Instrumentation System 43C

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures

OPG-PROTECED-EQUIPMENT, Operations Protected Equipment Program, Revision 01401
WC-AA-104, Integrated Risk Management, Revision 023

Section 1R15: Operability Determinations and Functionality Assessments

Procedures

ECP-15-000660-102-01-01, Turbine-Driven Auxiliary Feedwater Pump, Revision 0000
ECP-15-000660-103-01, Turbine-Driven Auxiliary Feedwater Pump, Revision 0000

Drawing

33013-1262, Safety Injection and Accumulators P&ID, Revision 33, Sheet 2 of 2

Issue Reports

02410327	02478506	02564317	02566721
02582409			

Work Orders

C92884287	C93017917	C93177453
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Miscellaneous

GIN-2015-1229, SI 'B' Accumulator leakage, Revision 000
 OPEVAL-15-009, Residual Heat Removal, Revision 000
 OPEVAL-15-010, Auxiliary Feedwater System (PSSL 04), Revision 000
 UFSAR

Section 1R18: Plant ModificationsProcedure

CC-AA-103, Configuration Change Control for Permanent Physical Plant Changes, Revision 0027

Drawings

21489-0752, RHR 'A' Pump Support, Revision 0
 21489-0752, RHR 'A' Pump Support, Revision 2, Sheet 1
 21489-0752, RHR 'B' Pump Support, Revision 0
 21489-0752, RHR 'B' Pump Support, Revision 0, Sheet 2

Action Request

02550753

Miscellaneous

ECP-15-000501-103-01, Design Consideration Summary, Revision 0001

Section 1R19: Post-Maintenance TestingProcedures

FSG-1, Long-Term RCS Inventory Control, Revision 00000
 FSG-8, Alternate RCS Injection, Revision 00000
 STP-O-16-COMP-T, Auxiliary Feedwater Turbine Pump – Comprehensive Test, Revision 02100
 STP-O-16QT, Auxiliary Feedwater Turbine Pump – Quarterly, Revision 01100
 STP-O-2.2QB, Residual Heat Removal Pump 'B' Inservice Test, Revision 01101
 STP-O-36-COMP-C, Standby Auxiliary Feedwater Pump 'C' – Comprehensive Test,
 Revision 01600
 STP-O-36-COMP-D, Standby Auxiliary Feedwater Pump 'D' – Comprehensive Test,
 Revision 01400
 T-27.4, Diesel Generator Operation, Revision 04203

Drawing

33013-1230, Alternate Charging System, Revision 044

Action Request

02564317

Miscellaneous

Engineering Change Notice ECP-14-000169-CN-090, Alternate Charging System

Section 1R20: Refueling and Other Outage Activities

Procedures

- A-3.1, Containment Storage and Closeout Inspection, Revision 05000
- AR-F-25, Reactor Vessel Flng Leak Off Hi Temp 150°F, Revision 006
- IP-IIT-7, Boric Acid Corrosion Monitoring Program, Revision 01001
- IP-OUT-2, Ginna Site-Specific Outage Risk Management, Revision 02101
- LS-AA-119, Fatigue Management and Work Hour Limits, Revision 012
- MA-AA-716-025, Scaffold Installation, Modification, and Removal Request Process, Revision 010
- MA-AA-1021, Outage Scaffold Readiness, Preparedness, and Execution, Revision 002
- O-1.1, Plant Heat-Up from Cold Shutdown to Hot Shutdown, Revision 16900
- O-1.1B, Establishing Containment Integrity, Revision 06801
- O-1.1D, Plant Requirement Check List for Heat-Up Greater than 350 Degrees Fahrenheit, Revision 06300
- O-2.1, Normal Shutdown to Hot Shutdown, Revision 13700
- O-2.2, Plant Shutdown from Hot Shutdown to Cold Conditions, Revision 15700
- O-2.3, Draining the Reactor Coolant System to Lowered Inventory <84" but >64", Revision 05001
- O-2.3.1, Draining and Operation at Reduced Inventory of the Reactor Coolant System, Revision 08604
- O-2.3.1A, Containment Closure Capability within Two Hours during RCS Reduced Inventory Operation, Revision 02602
- O-6.1, Equipment Operator Rounds and Log Sheets, Revision 05900

- O-15.2, Valve Alignment for Reactor Head Lift, Core Component Movement, and Periodic Status Checks, Revision 03900
- OP-AA-112-101, Shift Turnover and Relief, Revision 11
- PT-34.0, Startup Physics Testing Program, Revision 04300
- PT-34.1, Initial Criticality and Low-Power Physics Testing with DRWM, Revision 03406
- STP-I-32.1-B, Plant Safeguard Logic Test Train 'B', Revision 00501
- STP-O-R-2.1, Safety Injection Integrated Functional Test, Revision 00301
- STP-O-R-2.2, Diesel Generator Load and Safeguard Sequence Test, Revision 00901
- STP-O-R-6.0, Containment Integrated Leakage Rate Test, Revision 00003
- STP-O-2.1-COMP-B, Safety Injection Pump 'B' Comprehensive Test, Revision 00402
- STP-O-2.4, Shutdown Motor-Operated Valve Surveillance, Revision 00102
- STP-O-2.4.1, Inservice Test of RHR Suction and Discharge Valves, Revision 00000
- STP-O-3-COMP-A, Containment Spray Pump 'A' Comprehensive Test, Revision 00500
- STP-O-23.53.1, Local Leak Rate Test of S/G Communication Flange (Inside Containment) Pen 2, Revision 00101
- STP-O-7, ISI System Leakage Test Reactor Coolant System, Revision 00003
- SY-AA-102, Exelon Generation Fitness for Duty Program, Revision 019
- T-18C, Turbine Over-Speed Trip Test, Revision 02401

Action Requests

02566721	02573642	02574191	02574211
02574233	02576349	02582907	02583122

02583352
02584114

02583459

A-8
02583659

02583732

Miscellaneous

04-2015-0003(001), Tag-Out Tag List Clearance: RFO 2015 Outage dated October 23, 2015

Section 1R22: Surveillance Testing

Procedures

STP-O-22.1, Local Leak Rate Test of Equipment Hatch Door Seal, Revision 00202
STP-O-R-2.2, Diesel Generator Load and Safeguard Sequence Test, Revision 00901
STP-O-R-10.3, Preparation for and Performance of Main Steam Safety Valve Test Using Set Point Verification Device, Revision 00500

Miscellaneous

Appendix J Pathway Calculations – Type B and C, January 1 to December 19, 2015
Containment Leak Rate Summary/Mode Change Status Sheet dated November 2, 2015
Local Leak-Rate Test Daily Status – Type B and C, January 1 to December 19, 2015
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Section 1EP4: Emergency Action Level and Emergency Plan Changes

Procedure

EP-AA-112-700 SERIES, Alternative Facility Operation, Revision 000

Section 1EP6: Drill Evaluation

Miscellaneous

4th Quarter 2015 Emergency Response Organization Integrated Drill, Drill Manual
R. E. Ginna Nuclear Power Plant Examination Scenario, Faulted/Ruptured Steam Generator,
Revision 12

Section 2RS1: Radiological Hazard Assessment and Exposure Controls

Procedures

A-1.1, Access Control to 'A' Sump, Revision 04900
RP-3109, Post Shutdown Radiological Survey Verification, Revision 00302
RP-AA-17, Radiological Instrumentation Program, Revision 000
RP-AA-19, High Radiation Area Program Description, Revision 002
RP-AA-203-1001, Personnel Exposure Investigations, Revision 008
RP-AA-376, Radiological Postings, Labeling, and Markings, Revision 008
RP-AA-376-1001, Radiological Posting, Labeling, and Marking Standard, Revision 012
RP-AA-460, Controls for High and Locked High Radiation Areas, Revision 026
RP-AA-460-001, Controls for Very High Radiation Areas, Revision 005
RP-AA-460-002, Additional High Radiation Exposure Control, Revision 002
RP-AA-460-003, Access to HRAs/LHRAs/VHRAs and Contaminated Areas in Response to Potential or Actual Emergency, Revision 007
RP-AA-500, Radioactive Material Control, Revision 017
RP-AA-503, Unconditional Release Survey Method, Revision 010

RP-INS-O-METERS, Operation of Portable Survey Meters, Revision 01100
 RP-JC-DAILY-SRC-CHKS, Daily Instrument Source Checks, Revision 02802

Action Requests

02420139	02440185	02441226	02542758
02551730	02553425	02557472	02557716
02559559	02561515	02564413	02570214
02571397	02574694	02574732	02575745
02577553	02578379	02578382	02579342
02580006	02580017	02580330	02580625
02584317	02584511	02584931	02588368
02588378	02592222	02592232	02592237

Airborne Radioactivity Calculation Sheets

Air Sample 31813 dated October 19, 2015
 Air Sample 32596 dated October 21, 2015
 Air Sample 32597 dated October 21, 2015
 Air Sample 32598 dated October 20, 2015

Radiation Work Permits

GN-1-15-00507	GN-1-15-00510	GN-1-15-00607	GN-1-15-00609
GN-1-15-00611	GN-1-15-00612	GN-1-15-00613	GN-1-15-00614
GN-1-15-00616	GN-1-15-00618	GN-1-15-00620	GN-1-15-00621
GN-1-15-00801	GN-1-15-01102	GN-1-15-01103	GN-1-15-01106
GN-1-15-01107	GN-1-15-01108		

Radiological Survey Maps

Map 311 dated October 4 and 11, 2014
 Map 340 dated April 16 and July 13, 2015
 Map 350 dated October 2, 2015
 Map 420 dated April 11 and July 1, 2015
 Map for Containment Initial Entry dated October 19, 2015

Total Effective Dose Equivalent As Low As Reasonably Achievable (ALARA) Evaluations

GN-1-15-00507	GN-1-15-00510	GN-1-15-00607	GN-1-15-00612
GN-1-15-00613	GN-1-15-00616	GN-1-15-00618	GN-1-15-00620
GN-1-15-00621	GN-1-15-00801	GN-1-15-01102	GN-1-15-01103
GN-1-15-01106	GN-1-15-01107	GN-1-15-01108	

Miscellaneous

ALARA Plans 2015-0011, 2015-1005, 2015-1009, 2015-1013, 2015-1014, and 2015-1024
 Annual Inventory Reconciliation, National Source Tracking System, January 7, 2015
 Containment Access Forms (from Procedure A-3), Revision 06800, October 20, 2015
 Electronic Personal Dosimeter Alarm Log, October 19, 2014, to present
 Ginna Source Inventory, December 11, 2015
 Source Leak Test Record, July 15, 2015
 Total Effective Dose Equivalent ALARA Evaluation Screening Sheet, Repair to Mitigate 'B' SI
 Accumulator Leakage, December 14, 2015
 Whole Body Count Log, January 21 to September 30, 2015

Section 4OA1: Performance Indicator VerificationProcedures

RP-AA-19, High Radiation Area Program Description, Revision 002
 RP-AA-460, Controls for High and Locked High Radiation Areas, Revision 026
 RP-AA-460-001, Controls for Very High Radiation Areas, Revision 005
 RP-AA-460-002, Additional High Radiation Exposure Control, Revision 2
 RP-AA-460-003, Access to HRAs/LHRAs/VHRAs and Contaminated Areas in Response to a Potential or Actual Emergency, Revision 008

Action Requests

02503783	02506135	02506146	02506728
02528059	02536909	02540263	02555033
02559559	02561515	02562371	02576066
02583732			

Miscellaneous

NEI 99-02, Regulatory Assessment Performance Indicator Guideline, Revision 7
 Radiation Protection PIs Data Sheets, September 2014 to November 2015
 Radiological Controlled Area Exit Transactions >100 mrem, January 1 to November 13, 2015

Section 4OA2: Problem Identification and ResolutionProcedures

A-52.2, Control of Locked Valve and Breaker Operation, Revision 16800
 PI-AA-125, Corrective Action Program (CAP) Procedure, Revision 002
 PI-AA-125-1003, Apparent Cause Evaluation Manual, Revision 002
 PI-AA-127, Passport Action Tracking Management Procedure, Revision 001
 STP-O-R-2.2, Diesel Generator Load and Safeguard Sequence Test, Revision 00901

Drawings

33013-1238, Standby Auxiliary Feedwater P&ID, Revisions 026, 027, 028, and 035
 33013-1353, Logic Diagram Safeguards Sequence, Revision 003, Sheet 8
 53A6874, Limitorque Actuated Control Valve, Revision B001
 73490, Valve Assembly 4-Inch 300-Pound Swing Check Valve Carbon Steel, Revision C
 ACD-31602217, Rockwell Edward Forged Steel Check Valve, Revision 0C
 ACD-31602220, Rockwell Edward Forged Steel Univalve Stop Check Globe Valve, Revision 0A
 CBV-B5-40-0028, 4-Inch Full-Port Check Valve, Schedule 10 Buttweld, Revision A

Action Requests

02410327	02483272	02512706	02512891
02529695	02531840	02531841	02532266
02535842	02537382	02543615	02544195
02544252	02550168	02550377	02551351
02553805	02554980	02555261	02555927
02561466	02561777	02562287	02562881
02563208	02566721	02568229	02572066
02572144	02572159	02574211	02574481

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02574608	02576182	02577486	02578022
02578260	02579342	02579929	02581883
02581888	02581892	02581894	02581910
02581911	02581913	02581916	02581917
02581918	02581920	02581921	02582014
02584822	02584844	02584931	02587034
02588378			

Work Order
C92452648

Miscellaneous

50.59 Screening Form, ECP-13-000483, Standby AFW Piping Tie-in Design and Installation, Revision 0

Apparent Cause Investigation Report, Check Valve 9705A Failed during Testing, January 8, 2015
Event Notification Number 51604, December 14, 2015

Inservice Test Program Basis Document, October 6, 2015

LTR-0958-0087-1801, AFW Pump 'C' Test Backflow and Relief Valve Lift Event, December 23, 2014

OPEVAL-15-010, AFW System Operability Evaluation, Revision 0

STP-O-36-COMP-C, Standby AFW Pump 'C' – Comprehensive Test performed February 21, 2014; November 11, 14, and 15, 2014

STP-O-36-COMP-D, Standby AFW Pump 'D' – Comprehensive Test performed October 6, 2015

VTD-R0340-4004, Edward Univalve Operation and Maintenance Manual, Revision 001

Section 40A5: Other Activities

Miscellaneous

NRC Form 396, Certification of Medical Examination by Facility Licensee

NRC Inspection Report 05000244/2014005

NRC Inspection Report 05000244/2015007

LIST OF ACRONYMS

10 CFR	Title 10 of the <i>Code of Federal Regulations</i>
ADAMS	Agencywide Documents Access and Management System
AFW	auxiliary feedwater
ALARA	as low as reasonably achievable
AR	action request
ASME	American Society of Mechanical Engineers
CAP	corrective action program
EAL	emergency action level
ECP	engineering change package
EDG	emergency diesel generator
HRA	high radiation area
HX	heat exchanger
IMC	Inspection Manual Chapter
ISI	inservice inspection
LHRA	locked high radiation area
LPT	liquid penetrant testing
NDE	non-destructive examination
NEI	Nuclear Energy Institute
NOV	notice of violation
NRC	Nuclear Regulatory Commission, U.S.
ODCM	Offsite Dose Calculation Manual
P&ID	pipng and instrumentation drawing
PI	performance indicator
PWR	pressurized water reactor
RCS	reactor coolant system
RFO	refueling outage
RHR	residual heat removal
RT	radiographic testing
SI	safety injection
SL	severity level
SSC	structure, system, and component
TS	technical specification
UFSAR	Updated Final Safety Analysis Report
UT	ultrasonic testing
VHRA	very high radiation area
WO	work order