



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION I
2100 RENAISSANCE BLVD., SUITE 100
KING OF PRUSSIA, PA 19406-2713

October 27, 2015

Mr. Joseph E. Pacher
Site Vice President
R.E. Ginna Nuclear Power Plant, LLC
Exelon Generation Company, LLC
1503 Lake Road
Ontario, NY 14519

SUBJECT: R.E. GINNA NUCLEAR POWER PLANT, LLC - INTEGRATED INSPECTION
REPORT 05000244/2015003

Dear Mr. Pacher:

On September 30, 2015, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your R.E. Ginna Nuclear Power Plant, LLC. The enclosed inspection report documents the inspection results, which were discussed on October 15, 2015, with you and other members of your 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 Available Records component of the NRC's Agencywide Documents Access Management

J. Pacher

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Sincerely,

/RA/

Daniel L. Schroeder, Chief
Reactor Projects Branch 1
Division of Reactor Projects

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

Enclosure:
Inspection Report 05000244/2015003
w/Attachment: Supplementary Information

cc w/encl: Distribution via ListServ

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No. 50-244

License No. DPR-18

Report No. 05000244/2015003

Licensee: Exelon Generation Company, LLC (Exelon)

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

Location: Ontario, New York

Dates: July 1, 2015, through September 30, 2015

Inspectors: N. Perry, Senior Resident Inspector
J. Petch, Resident Inspector
H. Anagnostopoulos, Health Physicist
S. Horvitz, Project Engineer
P. Kaufman, Senior Reactor Inspector
K. Kolaczyk, Senior Resident Inspector

Approved by: Daniel L. Schroeder, Chief
Reactor Projects Branch 1
Division of Reactor Projects

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SUMMARY

Inspection Report 05000244/2015003; 07/01/2015 – 09/30/2015; R.E. Ginna Nuclear Power Plant, LLC (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 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 and remained at or near 100 percent 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 – 1 sample)

External Flooding

a. Inspection Scope

During the week of September 6, 2015, the inspectors performed an inspection of the external flood protection measures for Ginna. The inspectors reviewed technical specifications (TSS), procedures, design documents, and the Updated Final Safety Analysis Report (UFSAR), Chapter 2.4.2.1, which depicted the design flood levels and protection areas containing safety-related equipment to identify areas that may be affected by external flooding. The inspectors conducted a general site walkdown including the turbine building, auxiliary building, all external areas of the plant, and berm to ensure that Exelon erected flood protection measures in accordance with design specifications. The inspectors also reviewed operating procedures for mitigating external flooding during severe weather to confirm that, overall, Exelon had established adequate measures to protect against external flooding events and, more specifically, that credited operator actions were adequate. Documents reviewed for each section of this inspection report are listed in the Attachment.

b. Findings

No findings were identified.

1R04 Equipment Alignment

.1 Partial System Walkdowns (71111.04Q – 3 samples)

a. Inspection Scope

The inspectors performed partial walkdowns of the following systems:

- 'A' emergency diesel generator (EDG) on July 27, 2015
- 'B' residual heat removal (RHR) on August 26, 2015
- 'C' safety injection system on September 15, 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 diagrams, 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 corrective action program (CAP) for resolution with the appropriate significance characterization.

b. Findings

No findings were identified.

.2 Full System Walkdown (71111.04S – 1 sample)

a. Inspection Scope

On August 13, 2015, the inspectors performed a complete system walkdown of accessible portions of the 'C' standby auxiliary feedwater (SAFW) system to verify the existing equipment lineup was correct. The inspectors reviewed operating procedures, surveillance tests, drawings, equipment lineup check-off lists, and the UFSAR to verify the system was aligned to perform its required safety functions. The inspectors also reviewed electrical power availability, component lubrication and equipment cooling, hanger and support functionality, and operability of support systems. The inspectors performed field walkdowns of accessible portions of the systems to verify as-built system configuration matched plant documentation and that system components and support equipment remained operable. The inspectors confirmed that systems and components were aligned correctly, free from interference from temporary services or isolation boundaries, environmentally qualified, and protected from external threats. The inspectors also examined the material condition of the components for degradation and observed operating parameters of equipment to verify that there were no deficiencies.

b. Findings

No findings were identified.

1R05 Fire Protection

Resident Inspector Quarterly Walkdowns (71111.05Q – 7 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.

- 'B' battery room on July 9, 2015
- Relay / multiplex room on July 28, 2015
- Turbine building intermediate floor on August 5, 2015
- Auxiliary building basement east on August 6, 2015
- Turbine building operating floor on August 12, 2015
- Turbine building basement on September 22, 2015
- 'B' EDG on September 23, 2015

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors reviewed the RHR 'A' and 'B' heat exchangers (HXs) to determine their readiness and availability to perform their safety functions. The inspectors reviewed the design basis for the components 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 verified Exelon's use of the periodic maintenance method outlined in Electronic Power Research Institute NP-7552, "Heat Exchanger Performance Monitoring Guidelines," published December 1, 1991, and reviewed the results of the previous 2011 visual and eddy current inspections on both RHR 'A' and 'B' HXs. The inspectors discussed the results of the most recent inspection with engineering staff and walked down the as-found HX configuration. The inspectors verified that Exelon initiated appropriate corrective actions for identified deficiencies. 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.

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

.1 Quarterly Review of Licensed Operator Regualification Testing and Training

a. Inspection Scope

The inspectors observed licensed operator simulator training on September 22, 2015, which included a failed pressurizer level transmitter, a leak in the letdown line, a main steam isolation valve failing shut, a failure of the reactor to automatically trip, and a stuck open main steam safety valve. 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 made by the shift manager and the TS action statements entered. 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 a power reduction, turbine-driven auxiliary feedwater (AFW) surveillance test, and nuclear instrument replacement on September 3, 2015. The inspectors observed the control room briefings to verify the briefings were in accordance with Exelon's administrative procedure HU-AA-1211, "Pre-Job Briefings," Revision 010. Additionally, the inspectors verified that procedure use, crew communications, and coordination of activities between work groups similarly met established expectations and standards.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12Q – 1 sample)

a. Inspection Scope

The inspectors reviewed the reactor pressure vessel head O-ring seals on August 6, 2015, to assess the effectiveness of maintenance activities on structure, system, and component (SSC) performance and reliability. The inspectors reviewed system health reports, 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 the sample selected, the inspectors verified that the SSC was properly scoped into the maintenance rule in accordance with Title 10 of the *Code of Federal Regulations* (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.

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13 – 4 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 'B' EDG and 'D' SAFW pump on July 27, 2015
- Planned maintenance on fire protection systems and protection channel 4 calibrations on September 2, 2015
- Planned maintenance on service water 'B' check valve on September 19, 2015
- Planned maintenance on boric acid blender and fire system S-38 on September 24, 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:

- Halon suppression system (S08) with unanalyzed additional cabling on July 22 2015
- 'B' EDG low lube oil pressure alarm on July 28, 2015
- 'B' battery room cable pull box water intrusion on July 29, 2015
- R-9, the letdown radiation monitor, spiking high and low on September 14, 2015

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. The inspectors confirmed, where appropriate, compliance with

bounding limitations associated with the evaluations. 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.

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18 – 2 samples)

Permanent Modifications

a. Inspection Scope

The inspectors reviewed the modifications listed below to verify that the design bases, licensing bases, and performance capability of the affected systems were not degraded by the modification. In addition, the inspectors reviewed modification documents associated with the upgrade and design changes. The inspectors also reviewed revisions to the associated procedures and interviewed engineering, maintenance and operations personnel to ensure the procedures could be reasonably performed.

- Engineering Change Package (ECP)-13-000461, NIS Power Range Drawer Replacement
- ECP-14-000896, Intermediate Building Block Wall Reinforcement

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 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 documents, and that the test results were properly reviewed and accepted, and problems were appropriately documented. The inspectors also walked down the affected job site, observed the pre-job brief and post-job critique where possible, confirmed work site cleanliness was maintained, and witnessed the test or reviewed test data to verify quality control hold points were performed and checked, and that results adequately demonstrated restoration of the affected safety functions.

- 'B' EDG unplanned maintenance on July 28, 2015
- Bus 17 undervoltage test after circuit card replacements on July 30, 2015
- Plant process control system after circuit card replacement on August 19, 2015
- 'B' AFW pump after packing adjustment on August 27, 2015
- Alternate reactor coolant system injection flex pump after installation on September 17, 2015

- Main stack radiation monitors RM-12A and RM-14A after installation on September 24, 2015

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22 – 6 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-13.1, Annual Fire Pump Insurance Surveillance Test on July 7, 2015
- STP-O-13.4.5, Flood Valve Testing – Suppression System S14 Turbine-Driven Auxiliary Feedwater Pump and Turbine Lube Oil Reservoir Manual Deluge on August 20, 2015
- STP-O-2.2QB, Residual Heat Removal Pump 'B' Inservice Test on August 25, 2015 (inservice test)
- STP-O-12.2, Emergency Diesel Generator 'B' on August 26, 2015
- STP-O-40.3, Beyond Design Basis Flex Pump Annual Flow Test on September 1, 2015
- STP-O-16QT, Auxiliary Feedwater Turbine – Quarterly on September 3, 2015 (inservice test)

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation (71114.06 – 1 sample)

Training Observations

a. Inspection Scope

The inspectors observed a simulator training evolution for licensed operators on September 22, 2015, which required Emergency Plan implementation by an operations crew. Exelon planned for this evolution to be evaluated and included in performance indicator 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

2RS2 Occupational ALARA Planning and Controls (71124.02 – 1 sample)

a. Inspection Scope

The inspectors assessed Exelon's performance with respect to maintaining occupational individual and collective radiation exposures as low as reasonably achievable (ALARA). The inspectors used the requirements contained in 10 CFR 20, "Standards for Protection Against Radiation"; Regulatory Guide (RG) 8.8, "Information Relevant to Ensuring that Occupational Radiation Exposures as Nuclear Power Stations Will Be As Low As Is Reasonable Achievable"; RG 8.10, "Operating Philosophy for Maintaining Occupational Radiation Exposure As Low As Is Reasonably Achievable"; TSs; and procedures required by TSs as criteria for determining compliance.

Inspection Planning

The inspectors conducted a review of Ginna's collective dose history and trends, ongoing and planned radiological work activities, radiological source term history and trends, and ALARA dose estimating and tracking procedures.

Radiological Work Planning

The inspectors selected the following radiological work activities for review:

- Radiation Work Permit (RWP) 14-5605, "RP and ALARA Activities," Revision 00
- RWP 14-5612, "Scaffold Work Activities During Outage," Revision 00
- RWP 14-5621, "Steam Generator Secondary Side Work, Revision 01
- RWP 14-5624, "Medium Risk Valve Work Inside/Outside Containment," Revision 00

For each of these work activities, the inspectors reviewed ALARA work activity evaluations, exposure estimates, exposure reduction requirements, results achieved (dose rate reductions, actual dose), person-hour estimates and results achieved, and post-job reviews that were conducted to identify lessons learned.

Verification of Dose Estimates and Exposure Tracking Systems

The inspectors reviewed the current annual collective dose estimate; basis methodology; and measures to track, trend, and reduce occupational doses for ongoing work activities.

Source Term Reduction and Control

The inspectors reviewed the current plan radiological source term and historical trend, plans for plant source term reduction, and contingency plans for changes in the source term as the result of changes in plant fuel performance or changes in plant primary chemistry.

Problem Identification and Resolution

The inspectors evaluated whether problems associated with ALARA planning and controls were identified at an appropriate threshold and properly addressed in the CAP.

b. Findings

No findings were identified.

2RS7 Radiological Environmental Monitoring Program (71124.07 – 1 sample)

a. Inspection Scope

The inspectors reviewed the radiological environmental monitoring program (REMP) to validate the effectiveness of the radioactive gaseous and liquid effluent release program. The inspectors used the requirements in 10 CFR 20; 40 CFR 190, “Environmental Radiation Protection Standards for Nuclear Power Operations”; 10 CFR 50 Appendix I, “Numerical Guides for Design Objectives and Limiting Conditions for Operation to meet the Criterion “As Low As Is Reasonably Achievable” for Radioactive Material in Light-Water-Cooled Nuclear Power Reactor Effluents”; TSs; offsite dose calculation manual (ODCM); and procedures required by TSs as criteria for determining compliance.

Inspection Planning

The inspectors reviewed Ginna’s 2013 and 2014 annual radiological environmental and effluent monitoring reports, REMP program audits, ODCM changes, land-use census, and inter-laboratory comparison program results.

Onsite Inspection

The inspectors reviewed and/or observed the following items:

- Sample collection, monitoring, and dose measurement stations (e.g., thermoluminescence dosimeter, air monitoring, vegetation, milk)
- Calibration and maintenance records for air sample and dosimetry measurement equipment
- Environmental sampling of the effluent release pathways specified in the ODCM
- Meteorological tower and meteorological data readouts
- Meteorological instrument operability status and calibration results
- Missed and anomalous environmental samples identified, resolved, and reported in the annual radioactive environmental monitoring reports
- Positive environmental sample assessment results
- The groundwater monitoring program as it applies to selected potential leaking SSCs

- 10 CFR 50.75(g) records of leaks, spills, and remediation since the previous inspection
- Changes to the ODCM due to changes to the land-use census, long-term meteorological conditions, and/or modifications to the environmental sample stations
- Environmental sample laboratory analysis results and measurement detection sensitivities
- Results of the laboratory quality control program audit and the inter-and intra-laboratory comparison program results

Identification and Resolution of Problems

The inspectors evaluated whether problems associated with the REMP were identified at an appropriate threshold and properly addressed in Exelon's CAP.

b. Findings

No findings were identified.

4. **OTHER ACTIVITIES**

4OA1 Performance Indicator Verification (71151 – 5 samples)

Mitigating Systems Performance Index

a. Inspection Scope

The inspectors reviewed Exelon's submittal of the Mitigating Systems Performance Index for the following systems for the period of July 1, 2014, through June 30, 2015:

- Emergency Alternating Current Power System (MS06)
- High-Pressure Injection System (MS07)
- Heat Removal System (MS08)
- Residual Heat Removal System (MS09)
- Cooling Water System (MS10)

To determine the accuracy of the performance indicator data reported during those periods, the inspectors used definitions and guidance contained in Nuclear Energy Institute 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 7. The inspectors also reviewed Exelon's operator narrative logs, mitigating systems performance index derivation reports, event reports, and NRC integrated inspection reports to validate the accuracy of the submittals.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152 – 1 sample)

.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 action request (AR) screening meetings. The inspectors also confirmed, on a sampling basis, that, as applicable, for identified defects and non-conformances, Exelon staff performed an evaluation in accordance with 10 CFR Part 21.

b. Findings

No findings were identified.

.2 Annual Sample: Trend Identified in Repeat Equipment Issues

a. Inspection Scope

The inspectors performed a review of Exelon staff’s corrective actions related to a trend of equipment problems over a 4-month period from September to December 2014 that were repeat issues that could have been prevented.

As a result of the equipment issues, Exelon generated trend issue report (IR) 02429230. The inspectors performed an in-depth review of the equipment issues to assess the problem threshold, extent-of-condition reviews, and the timeliness of corrective actions to determine whether Exelon staff were adequately correcting the problems associated with repeat equipment issues and whether the planned or completed corrective actions were appropriate. The inspectors reviewed a sample of equipment issues documented in the following IRs:

- Bus 14 EDG ‘A’ supply breaker failed to close on demand (IR 02178745)
- Reverse-flow event occurred during flow testing of the SAFW train ‘C’ due to check valves not seating properly in the pump discharge line (IR 02410327)
- Outboard seal was found leaking on the ‘B’ component cooling water (CCW) pump (IR 02415978)
- Undervoltage circuitry for bus 18 trouble alarm in the control room (IR 02424722)

The inspectors reviewed a sample of the corrective action documents, which included IRs, work orders, lesson plans, and procedures. The inspectors compared the performance of corrective actions taken or proposed to the requirements and standards contained in 10 CFR 50, Appendix B, Criterion XVI, “Corrective Action,” and PI-AA-125, “Corrective Action Program (CAP) Procedure,” Revision 002.

b. Findings and Observations

No findings were identified.

The cause of the bus 14 EDG 'A' supply breaker failure was inadequate alignment of the operating mechanism that was similar to the operating mechanism failures that occurred on these Westinghouse DB-75 breakers in 2005. The inspectors noted that this issue was previously evaluated by the NRC to be a Severity Level IV self-revealing violation and Exercise of Enforcement Discretion as documented in NRC Integrated Inspection Report 05000244/2014005. The inspectors determined that Exelon's corrective actions were adequate to address the deficiency. The scope and timing of the corrective actions was determined to be commensurate with the safety significance of the problems.

The SAFW train 'C' backflow event that occurred on November 11, 2014, was similar to a 1999 event that occurred in the same 'C' train. The cause was due to the check valves not seating properly, because the system resistance and hydraulic conditions during the test allowed for some limited flow reversal from the steam generator toward the pump, but the flow rate was not sufficient to fully seat the check valves. The inspectors determined that the corrective action to revise the test procedures to close the motor-operated valves before stopping the pump should adequately resolve the check valve problem.

The 'B' CCW pump outboard seal was found leaking on November 22, 2014, because the seal was incorrectly assembled during maintenance on September 22, 2009, which caused the seal failure. The 'A' CCW pump seal had failed in 2009 due to a similar reassembly error. The mechanical seals of the 'B' CCW pump were incorrectly assembled on September 22, 2009, due to insufficient procedural guidance of the proper internal configuration of the mechanical seals and inadequate knowledge of seal design. The inspectors determined that the maintenance procedure for the CCW pumps was revised to reflect the proper installation of the mechanical seal spring adapter.

The cause of the undervoltage circuitry for bus 18 was a failed resistor in the solid state switch 1 circuit, which was similar to a failure that occurred in 2011 that was also caused by a failure of the same resistor in a different card on bus 16. The inspectors noted that this issue was previously evaluated and documented in NRC Integrated Inspection Report 05000244/2015001 as a non-cited violation. The inspectors determined that Exelon's corrective actions were adequate to address the deficiency and met the standards in the CAP. The scope and timing of the corrective actions was determined to be commensurate with the safety significance of the problems.

The inspectors concluded that Exelon appropriately identified the adverse trend of repeat equipment issues where previous opportunities existed to prevent reoccurring equipment problems and documented it in IR 02429230. The inspectors found that the technical conscience/technical rigor initiative should serve to emphasize to Exelon engineers the potential for down-stream consequences of their day-to-day activities. The inspectors determined the extent-of-condition reviews, previous occurrences, and common-cause evaluations were adequately performed. The scope and timing of the corrective actions was determined to be commensurate with the safety significance of the problems.

4OA3 Follow-Up of Events and Notices of Enforcement Discretion (71153 – 2 samples)

- .1 (Closed) Licensee Event Report (LER) 05000244/2015-001-00: Human Performance Error during Data Collection Activity Results in a Condition Prohibited by Technical Specification 3.1.7, “Rod Position indication”

On June 30, 2015, during rod movement testing, it was discovered that the data recorder temporarily installed as a secondary method of monitoring position of control rod L06 had an incorrect trigger setting. Exelon determined that they had violated TS 3.1.7 between June 28 and June 30, 2015. Ginna uses a microprocessor rod position indication system for all reactor vessel control rod positions; and on October 21, 2014, microprocessor rod position indication began indicating the L06 control rod position as 0 inches or fully inserted into the reactor core. The control rod’s actual position was 224 inches. To comply with TS 3.1.7.A.3.2, Ginna installed a data recorder to monitor the L06 control rod moveable gripper coil rod position system circuit. Between June 28 and June 30, 2015, the data recorder was incorrectly configured rendering it unable to record any changes in the L06 rod position system circuit.

The inspectors determined that the incorrectly configured data recorder was a performance deficiency and dispositioned the performance deficiency in accordance with Inspection Manual Chapter 0612 Appendix B, “Issue Screening.” Since the performance deficiency did not result in any actual consequence, such as an unanticipated change in reactor reactivity or actuation of any reactor safety system, was related to control rod position indication only, and Ginna entered this performance deficiency in the CAP as AR 02521934, the inspectors determined that this issue is minor. The inspectors did not find any additional issues during review of this LER. This LER is closed.

- .2 (Closed) LER 05000244/2015-001-01: Human Performance Error during Data Collection Activity Results in a Condition Prohibited by Technical Specification 3.1.7, “Rod Position Indication”

This LER was revised on September 24, 2015, to reflect changes in the root cause of the event that were outlined in the original LER submittal. In the original LER, Exelon indicated that one cause of the event was a corrupt data recorder file. Without any supporting evidence to justify a corrupt data recorder file, Exelon determined that this was not a likely cause of the event and removed it from the LER. The inspectors did not identify any new issues during the review of this revised LER. This LER is closed.

4OA5 Other Activities

(Closed) NRC Temporary Instruction (TI) 2515/190 – Inspection of the Proposed Interim Actions Associated with Near-Term Task Force Recommendation 2.1 Flooding Hazard Evaluations

- a. Inspection Scope

The inspectors verified that Exelon’s interim actions will perform their intended function for flooding mitigation.

- Visual inspection of the flood protection feature was performed if the flood protection feature was relevant. External visual inspection for indications of degradation that would prevent its credited function from being performed was performed.
- Flood protection feature functionality was determined using either visual observation or by review of other documents.

The inspectors verified that issues identified were entered into Exelon's CAP.

b. Findings and Observations

No findings were identified.

This completes the inspection requirements of TI 2515/190.

4OA6 Meetings, Including Exit

On October 15, 2015, the inspectors presented the inspection results to Mr. Joseph Pacher, 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
J. Bowers, Radiation Protection General Supervisor
T. Edwards, Manager, Site Chemistry, Environmental and Radwaste
D. Blankenship, Director, Site Operations
R. Everett, Director, Site Engineering
K. Garnish, Senior Manager, Operations Support & Services
T. Harding, Manager, Site Regulatory Assurance
D. Markowski, Sr. Manager, Engineering Design
J. Scalzo, Manager, Site Security
J. Sperr, Manager, System Engineering
P. Swift, Director, Site Work Management
S. Wihlen, Director, Site Maintenance

LIST OF ITEMS OPENED, CLOSED, DISCUSSED, AND UPDATED

Closed

05000244/2015-001-00 and 05000244/2015-001-01	LER	Human Performance Error during Data Collection Activity Results in a Condition Prohibited by Technical Specification 3.1.7, "Rod Position Indication" (Section 4OA3)
05000244/2515/190	TI	Inspection of the Proposed Interim Actions Associated with Near-Term Task Force Recommendation 2.1 Flooding Hazard Evaluations (Section 4OA5)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Procedures

ER-SC.2, High Water (Flood) Plan, Revision 01001
GMM-23-99-FLOODBARRIER, Flood Barrier Installation and Removal in Turbine Building
Basement, Revision 00001

Drawings

33013-1259, Miscellaneous Liquid Waste Disposal Liquid, Revision 16
33013-1270, Waste Disposal-Liquid Waste Drains, Holdup Tank, Spent Resin Tanks,
Revision 25, Sheet 1
33013-1270, Waste Disposal-Liquid Waste Drains, Holdup Tank, Spent Resin Tanks,
Revision 11, Sheet 2
33013-1272, Waste Disposal-Liquid RC Drain Tank, Revision 11, Sheet 1
33013-1272, Waste Disposal-Liquid RC Drain Tank, Revision 17, Sheet 2

Section 1R04: Equipment Alignment

Procedures

STP-O-30.1, Safety Injection System Valve and Breaker Position Verification, Revision 00105
STP-O-30.2, RHR System Valve and Breaker Position Verification, Revision 00003
STP-O-30.10, Emergency Diesel Generator 'A' Pre-Startup Alignment, Revision 00503
T-44.2, Standby Auxiliary Feedwater System Alignment for Normal Operation, Revision 03600

Drawings

33013-1238, Standby Auxiliary Feedwater Piping and Instrumentation Drawing (P&ID),
Revision 34
33013-1239, Diesel Generator 'A' P&ID, Revision 28
33013-1247, Auxiliary Coolant Residual Heat Removal P&ID, Revision 47
33013-1250, Station Service Cooling Water Safety Related P&ID, Revision 49
33013-1262, Safety Injection and Accumulators P&ID, Revision 33, Sheet 1
33013-1262, Safety Injection and Accumulators P&ID, Revision 7, Sheet 2

Section 1R05: Fire Protection

Procedures

FRP-4.0, Auxiliary Building Basement, Revision 00802
FRP-18.0, Battery Room 'B', Revision 00601
FRP-19.0, Relay Room / Multiplexer Room / Annex Room, Revision 01002
FRP-21.0, Turbine Building Basement, Revision 01201
FRP-22.0, Turbine Building Intermediate Floor, Revision 01402
FRP-23.0, Turbine Building Operating Floor, Revision 01102
FRP-25.0, Diesel Generator Room 'B' and Vault, Revision 00900
STP-O-13.4.33, Station Halon Systems Bottle Weighing and S08 (Relay Room and Computer
Room) Air Flow Test, Revision 00201

Drawings

- 21488-0102, Battery Room 'B' North Wall Section A-A Penetration Locations Floor Elevation 253 feet 6 inches, Revision 5, Sheet 1
- 21488-0102, Battery Room 'B' West Wall Elevation Penetration Locations Floor Elevation 253 feet 6 inches, Revision 12, Sheet 2
- 21488-0105, Fire Barrier Arrangement Sheet Relay Room Floor Plan Penetration Locations, Revision 9
- 21488-0122, Fire Barrier General Arrangement Sheet S.R.F. Room and S.A.T. Room Fire Area Boundaries Penetration and Pyrocrete Locations Floor Elevation 253 feet 8 inches, Revision 4, Sheet 2
- 21488-0122, Fire Barrier General Arrangement Sheet Charging Pump Room Fire Area Boundaries Penetration and Pyrocrete Locations Floor Elevation 235 feet 8 inches, Revision 12, Sheet 3
- 33013-2543, Fire Response Plan Auxiliary Building Plan – Basement Floor Elevation 235 feet 8 inches, Revision 8
- 33013-2544, Fire Response Plan Turbine Building Plan – Basement Floor Elevation 253 feet 6 inches, Revision 13
- 33013-2550, Fire Response Plan Turbine Building Intermediate Floor Elevation 271 feet, Revision 14
- 33013-2556, Fire Response Plan Turbine Building Operating Floor Elevation 289 feet 6 inches, Revision 8
- 33013-2559, Fire Response Plan Control Building, Revision 13

Action Requests

02538302

Section 1R07: Heat Sink Performance

Work Orders

C90671909

C90671911

Miscellaneous

- 38 – Regenerative Heat Removal HX – 'A', Eddy Current Test Results, 2011
- 39 – Regenerative Heat Removal HX – 'B', Eddy Current Test Results, 2011
- 2011 'A' RHR Heat Exchanger Secondary Side Inspection EOC35
- 2011 'B' RHR Heat Exchanger Secondary Side Inspection EOC35
- No. 11/020 UFSAR Change Notice, September 29, 1994

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

Procedures

- CPI-AXIAL-N43, Calibration of Nuclear Instrumentation System Power Range N43 Axial Offset, Revision 03600
- HU-AA1211, Pre-Job Briefings, Revision 010
- M-71.4, Removal and/or Installation of Modules within Defeated or Out-of-Service Instrument Loops, Revision 02501
- STP-O-16QT, Auxiliary Feedwater Turbine Pump – Quarterly, Revision 00901

Section 1R12: Maintenance EffectivenessCondition Reports

2012-008694 2014-002721 2014-003124 2014-003256

Miscellaneous

Nuclear Reactor Pressure Vessel Seals, Technetics Group, Retrieved from

www.techneticsgroup.com

O-Flex Metal O-Rings, Technetics Group, Retrieved from www.techneticsgroup.com

Section 1R13: Maintenance Risk Assessments and Emergent Work ControlProcedures

OP-A-108-117, Protected Equipment Program, Revision 004

OPG-PROTECTED-EQUIPMENT, Operations Protected Equipment Program, Revision 01300

Section 1R15: Operability Determinations and Functionality AssessmentsAction Requests

02523297 02533610 02534565

Issue Reports

02527505 02551952

Work Orders

C93182568

Miscellaneous

ESR-15-008, Functionality Assessment of R-9 per IR 02551952, Revision 000

Functionality Assessment for IR 02527505

Operational Decision Making for AR 02533610

OPEVAL-15-008, IR 02534565 'B' Battery Room Cable Vault, Revision 000

Section 1R18: Plant ModificationsProcedures

CPI-AXIAL-N43, Calibration of Nuclear Instrumentation System Power Range N43 Axial Offset,
Revision 03600

LS-AA-104-1001, 50.59 Review Cover Sheet Form, Revision 4

M-71.4, Removal and/or Installation of Modules within Defeated or Out-of-Service Instrument
Loops, Revision 02501

Drawings

03201-0102, 120V AC Instrument Bus One-Line Diagram, Revision 25

21488-0100, Fire Barrier General Arrangement Drawing Fire, Smoke and Pressure Barriers Plan
View Elevation 271 feet 0 inches, Revision 20, Sheet 5

21488-0100, Fire Barrier General Arrangement Drawing Fire, Smoke and Pressure Barriers Plan
View Elevation 289 feet 6 inches, 293 feet 0 inches, 298 feet 4 inches, 315 feet 4 inches;
and Screen House Elevation 239 feet 6 inches, 243 feet 6 inches, and 253 feet 6 inches,
Revision 6, Sheet 6

33013-2409, AC Electrical System One Line Wiring Diagram, Revision 7
33013-2758, Intermediate Building Block Wall Structural Upgrade Wall Section Details,
Revision 1, Sheets 3 and 4
33013-2918, Intermediate Building Block Wall Reinforcement West Wall Column H3 to G3,
Revision N/A, Sheet 12-21
D-523-022, Intermediate Building Steel Framing Platforms Elevation 293 feet 0 inches and
Elevation 298 feet 4 inches, Revision 15

Condition Reports

2013-006583

Action Requests

02551853

Work Orders

C92334791

Miscellaneous

ECP-13-000461, NIS Power Range Drawer Replacement, Revision 0000

Section 1R19: Post-Maintenance Testing

Procedures

OPG-IWS-Support, Operations Support of the Integrated Work Schedule, Revision 10703,
Attachment 2
S-6.1, Quadrant Power Tilt Monitor Operability Check, Revision 02101
S-26.1, Computer Program Check, Revision 04507
STP-I-9.1.17, Undervoltage Protection – 480 Volt Safeguard Bus 17, Revision 00901
STP-O-2.2QB, Residual Heat Removal Pump 'B' Inservice Test, Revision 01101
STP-O-12.2, Emergency Diesel Generator 'B', Revision 01504
STP-O-16QB, Auxiliary Feedwater Pump 'B' – Quarterly, Revision 00601
STP-O-17.5M, Source Check of High Range Effluent Monitors RM-12A, RM-14A, R-31, R-32,
R-47, R-48, Revision 00300
T-27.4, Diesel Generator Operation, Revision 04203

Drawings

33013-0710B, Diesel Generator 'B' Elementary Wiring Diagram, Revision 19

Action Requests

02533610 02543452 02555033

Work Orders

C92890827

Section 1R22: Surveillance Testing

Procedures

STP-O-2.2QB, Residual Heat Removal Pump 'B' Inservice Test, Revision 01101
STP-O-12.2, Emergency Diesel Generator 'B', Revision 01600
STP-O-13.1, Annual Fire Pump Insurance Surveillance Test, Revision 00303

STP-O-13.4.6, Flood Valve Testing-Suppression System S14 Turbine-Driven Auxiliary Feedwater Pump and Turbine Lube Oil Reservoir Manual Deluge, Revision 00002
 STP-O-16QT, Auxiliary Feedwater Turbine Pump – Quarterly, Revision 00901
 STP-O-40.3, Beyond Design Basis Flex Pump Annual Flow Test, Revision 00100

Section 2RS2: Occupational ALARA Planning and Controls

Procedures

PI-AA-126-1005-F-01, Check-In Self-Assessment, Revision 000
 RP-AA-400, ALARA Program, Revision 011
 RP-AA-401, Operational ALARA Planning and Controls, Revision 019
 RP-AA-403, Administration of the Radiation Work Permit Program, Revision 007
 RP-ALA-PLAN/RWP-PREP, Total Effective Dose Evaluations (TEDE), Revision 00700

Action Requests

01962386	02391934	02458167	02473891
02477811	02499641	02503444	

Condition Reports

2013-000316	2014-001750	2014-003003	2014-003361
2014-003363			

Issue Reports

02422022	02496002
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ALARA Post-Job Reviews

RWP 14-5605
 RWP 14-5612
 RWP 14-5618
 RWP 14-5621
 RWP 14-5624
 RWP 14-9618

ALARA Reviews

RWP 14-5605, Revision N/A
 RWP 14-5612, Revision 00
 RWP 14-5618, Revision 00
 RWP 14-5621, Revision 00
 RWP 14-5624, Revision 00
 RWP 14-9618, Revision 00

TEDE ALARA Evaluations

RWP 14-5605, Job Coverage, Shielding, Inspections
 RWP 14-5612, Tasks 1 and 2
 RWP 14-5618, Tasks 1, 2, 3, 4, and 5
 RWP 14-5621, Tasks 1, 2, and 3
 RWP 14-5624, Chemical Volume and Control System 135, Valve 431B, Tasks 1 to 6, V-243, V-265, and V-712B
 RWP 14-9618, Tasks 1, 2, 3, and 5

Work In-Progress Reviews

RWP 14-5605, May 3 and 11, 2014
RWP 14-5612, May 3 and 9, 2014
RWP 14-5618, May 1 and 7, 2014
RWP 14-5621, May 7 and 11, 2014
RWP 14-5624, May 5 and 14, 2014
RWP 14-9618, May 1 and 7, 2014

Miscellaneous

2014 ALARA Outage Report
2015 to 2019 Dose Excellence Plan dated June 14, 2014
ALARA Committee Minutes dated July 10, November 21, December 11, 2013; March 13, April 30, May 1, 6, 9, 12, 14, 18, and August 27, 2014
R.E. Ginna Radiation Protection Report dated March 15, 2015
RPP-13-01-G, Radiation Protection Program Audit dated October 30, 2013
SA-2013-000017, RWP Work Controls dated February 24, 2014

Section 2RS7: Radiological Environmental Monitoring Program

Procedures

CH-155, Chemistry Radiological Environmental Monitoring Program, Revision 00300
CH-261, Collection and Analysis of Groundwater Samples, Revision 00800
CH-520, Operation of Tri-Carb Liquid Scintillation Analyzer, Revision 00200
CH-ENV-AIR, Collection and Calculation of Beta Activity for Environmental Air Samples, Revision 01000
CH-ENV-AIR-GAMMA, Gamma Scan of Environmental Air Samples, Revision 003
CH-ENV-AIR-I2, Counting and Calculation of Iodine Samples, Revision 00501
CH-ENV-AQUATIC, Gross Activity in Aquatic Samples, Revision 00801
CH-ENV-EPIP, Handling Pass and In-Plant Samples during Accident Conditions in the Environmental Laboratory, Revision 00301
CH-ENV-LAND-USE, Land Use Census, Revision 00405
CH-ENV-MILK, Collection of Milk Samples, Revision 00602
CH-ENV-TLD-OSL, Collecting Environmental TLD/OSL(S), Revision 00200
CH-ENV-TRANS, Preparation and Shipment of Environmental Samples to Vendor Lab, Revision 00700
CH-ENV-VEG, Collection of Vegetation Samples, Revision 00501
CH-ENV-WATER, Collection of Water Samples, Revision 02100
CH-RETS-MET, Meteorological System Surveillance, Revision 00601
CHA-ENV-QV-INTRALAB, Chemistry Radiological Environmental Quality Control, Revision 003
CHA-ENV-TECH, Duties of Environmental Surveillance Technician, Revision 00502
CY-AA-170-000, Radioactive Effluent and Environmental Monitoring Programs, Revision 006
CY-AA-170-100, Radiological Environmental Monitoring Program, Revision 002
CY-AA-170-1000, Radiological Environmental Monitoring Program and Meteorological Program Implementation, Revision 008
CY-AA-170-1100, Quality Assurance for Radiological Monitoring Programs, Revision 002
EN-AA-407, Response to Inadvertent Releases of Licensed Materials to Groundwater, Surface Water, Soil or Engineered Structures, Revision 007
EN-AA-408, Radiological Groundwater Protection Program, Revision 000
EN-AA-408-4000, Radiological Groundwater Protection Program Implementation, Revision 005
EN-GI-408-4160, RGPP Reference Material for R.E. Ginna Nuclear Power Plant, Revision 000
RP-2210, Environmental Gas Meter Calibration, Revision 00100

Action Requests

02457590	02506728	02512059	02518343
02528059	02533846	02536909	02538962
02540263			

Condition Reports

2013-001038	2013-001253	2013-002710	2013-003413
2014-001216			

Work Orders

C92360185	C92360247	C92284631	C92293305
C92323520	C92360185	C92360247	

Miscellaneous

2014 Meteorological Monitoring Program Annual Report
 EDOC-MISC-2015-0036, Vendor Calibration of the Ginna MET Tower, July 11, 2015
 Environmental Gas Meter Calibration, Serial Numbers 04E048706, 04E048711, 04E048712, and
 04E048717
 Focused Area Self-Assessment, REMP, AR 2434007, June 12, 2015
 Gamma Spectroscopy Reports, Ontario Water District, Sampled on February 10, March 10, and
 April 7, 2014
 Groundwater Protection Program, SSC Priority Index Worksheet
 ODCM, Revision 29
 Water Composite Auto Sampler Verification, MWCA, August 12, 2015
 Water Composite Auto Sampler Verification, Screen House, June 28, 2015
 Water Composite Auto Sampler Verification, Webster, April 30, 2015

Section 4OA1: Performance Indicator VerificationMiscellaneous

NEI 99-02, Regulatory Assessment Performance Indicator Guideline, Revision 7

Section 4OA2: Problem Identification and ResolutionProcedures

AD-AA-3000, Nuclear Risk Management Process, Revision 001
 PI-AA-125, Corrective Action Program (CAP) Procedure, Revision 002
 PI-AA-125-1003, Apparent Cause Evaluation Manual, Revision 002
 STP-O-16-COMP-A, Auxiliary Feedwater Pump 'A' – Comprehensive Test, Revision 01300
 STP-O-16-COMP-B, Auxiliary Feedwater Pump 'B' – Comprehensive Test, Revision 01000
 STP-O-16.3A, AFW Pump 'A' Discharge MOV Test, Revision 00700
 STP-O-16.3B, AFW Pump 'B' Discharge MOV Test, Revision 00500
 STP-O-16.3C, SAFW Pump 'C' Discharge MOV Test, Revision 00800
 STP-O-16.3D, SAFW Pump 'D' Discharge MOV Test, Revision 00700

Issue Reports

02178745	02410327	02415978	02424722
02429230			

Work Orders

C92921622

Miscellaneous

LER 05000244/2014-003-00, 'A' Emergency Diesel Generator Output Breaker Fails to Close during Routine Surveillance Testing Resulting in a Condition Prohibited by Technical Specifications and a Potential Inability to Fulfill a Safety Function

Lesson Plan N-GN-ESRDDAFW-MSPI-PRA

MPR Letter Report, AFW Pump 'C' Test Backflow and Relief Valve Lift Event, December 23, 2014
NRC Integrated Inspection Reports 05000244/2014005 and 05000244/2015001

Section 40A3: Follow-Up of Events and Notices of Enforcement Discretion

Miscellaneous

Apparent Cause Investigation Report, Recorder on L06 Found to be not Ready for Trigger Signal

Action Request

02521934

Section 40A5: Other Activities

Procedures

AP-ELEC.17/18, Loss of Safeguards Bus 17/18, Revision 00802

AP-SW.2, Loss of Service Water, Revision 00801

EPIP-1-17, Planning for Adverse Weather, Revision 01000

ER-SC.1, Adverse Weather Plan, Revision 02000

ER-SC.2, High Water (Flood) Plan, Revision 01001

ER-SH.1, Response to Loss of Screen House, Revision 00202

GMM-23-99-FLOODBARRIER, Flood Barrier Installation and Removal in Turbine Building Basement, Revision 00001

SC-3.17, Auxiliary Building Flood Barrier Installation/Removal/Inspection, Revision 00301

Drawings

21488-0500, Auxiliary Building Flood Barriers, Revision 1, Sheet 1

21488-0500, Auxiliary Building Flood Barriers, Revision 0, Sheet 2

21488-0501, Control Building Flood Barriers, Revision 1, Sheet 1

21488-0501, Control Building Flood Barriers, Revision 0, Sheet 2

21488-0502, Diesel Generator Building Flood Barriers, Revision 0, Sheet 1

21488-0502, Diesel Generator Building Flood Barriers, Revision 1, Sheet 2

Action Requests

02553975

02554041

02554059

02554088

02554110

LIST OF ACRONYMS

10 CFR	Title 10 of the <i>Code of Federal Regulations</i>
AFW	auxiliary feedwater
ALARA	as low as reasonably achievable
AR	action request
CAP	corrective action program
CCW	component cooling water
CR	condition report
ECP	engineering change package
EDG	emergency diesel generator
HX	heat exchanger
IR	issue report
LER	licensee event report
NRC	Nuclear Regulatory Commission, U.S.
ODCM	offsite dose calculation manual
P&ID	pipng and instrumentation drawing
REMP	radiological environmental monitoring program
RG	regulatory guide
RHR	residual heat removal
RWP	radiation work permit
SAFW	standby auxiliary feedwater
SSC	structure, system, and component
TEDE	total effective dose evaluation
TI	temporary instruction
TS	technical specification
UFSAR	Updated Final Safety Analysis Report