



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

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

November 13, 2008

Mr. Charles G. Pardee  
President and Chief Nuclear Officer (CNO), Exelon Nuclear  
Chief Nuclear Officer (CNO), AmerGen Energy Company, LLC  
4300 Winfield Road  
Warrenville IL 60555

**SUBJECT:** DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3  
INTEGRATED INSPECTION REPORT 05000237/2008-004;  
05000249/2008-004

Dear Mr. Pardee:

On September 30, 2008, the U.S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at your Dresden Nuclear Power Station, Units 2 and 3. The enclosed report documents the inspection findings, which were discussed on October 15, 2008, with Mr. D. Wozniak and other members of your staff.

The inspection 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.

Based on the results of this inspection, one self-revealed and one NRC-identified findings of very low safety significance were identified. One of the findings involved a violation of NRC requirements. However, because of its very low safety significance, and because the issue was entered into your corrective action program (CAP), the NRC is treating the issue as a Non-Cited Violation (NCV) in accordance with Section VI.A.1 of the NRC Enforcement Policy. Additionally, two licensee-identified violations are listed in Section 4OA7 of this report.

If you contest the subject or severity of a NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission - Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the Resident Inspector Office at the Dresden Station.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be made available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

**/RA/**

Mark A. Ring, Chief  
Branch 1  
Division of Reactor Projects

Docket Nos. 50-237; 50-249  
License Nos. DPR-19; DPR-25

Enclosure: Inspection Report 05000237/2008-004; 05000249/2008-004  
w/Attachment: Supplemental Information

cc w/encl: Site Vice President - Dresden Nuclear Power Station  
Plant Manager - Dresden Nuclear Power Station  
Regulatory Assurance Manager – Dresden Nuclear Power Station  
Chief Operating Officer and Senior Vice President  
Senior Vice President - Midwest Operations  
Senior Vice President - Operations Support  
Vice President - Licensing and Regulatory Affairs  
Director - Licensing and Regulatory Affairs  
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Assistant Attorney General  
J. Klinger, State Liaison Officer,  
Illinois Emergency Management Agency  
Chairman, Illinois Commerce Commission

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Plant Manager - Dresden Nuclear Power Station  
Regulatory Assurance Manager – Dresden Nuclear Power Station  
Chief Operating Officer and Senior Vice President  
Senior Vice President - Midwest Operations  
Senior Vice President - Operations Support  
Vice President - Licensing and Regulatory Affairs  
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SUBJECT: DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3  
INTEGRATED INSPECTION REPORT 05000237/2008-004;  
05000249/2008-004

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 50-237; 50-249  
License Nos: DPR-19; DPR-25

Report No: 05000237/2008-004; 05000249/2008-004

Licensee: Exelon Generation Company

Facility: Dresden Nuclear Power Station, Units 2 and 3

Location: Morris, IL

Dates: July 1 through September 30, 2008

Inspectors: C. Phillips, Senior Resident Inspector  
D. Meléndez-Colón, Resident Inspector  
B. Cushman, Reactor Engineer  
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M. Phalen, Health Physicist  
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D. Lords, Resident Inspector, Clinton  
J. Draper, Reactor Engineer

Approved by: M. Ring, Chief  
Projects Branch 1  
Division of Reactor Projects

Enclosure

## TABLE OF CONTENTS

SUMMARY OF FINDINGS .....	1
REPORT DETAILS.....	3
Summary of Plant Status.....	3
1. REACTOR SAFETY.....	4
1R01 Adverse Weather Protection (71111.01) .....	4
1R04 Equipment Alignment (71111.04).....	4
1R05 Fire Protection (71111.05) .....	5
1R06 Flooding (71111.06).....	7
1R11 Licensed Operator Requalification Program (71111.11Q).....	7
1R12 Maintenance Effectiveness (71111.12).....	8
1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13).....	9
1R15 Operability Evaluations (71111.15) .....	9
1R18 Plant Modifications (71111.18).....	10
1R19 Post-Maintenance Testing (71111.19) .....	11
1R20 Outage Activities (71111.20).....	12
1R22 Surveillance Testing (71111.22) .....	12
1EP6 Drill Evaluation (71114.06).....	16
2. RADIATION SAFETY .....	16
2OS1 Access Control to Radiologically Significant Areas (71121.01) .....	16
2OS2 As-Low-As-Is-Reasonably-Achievable Planning And Controls (71121.02).....	17
2PS3 Radiological Environmental Monitoring Program and Radioactive Material Control Program (71122.03) .....	18
4. OTHER ACTIVITIES .....	21
4OA1 Performance Indicator Verification (71151-05).....	21
4OA2 Identification and Resolution of Problems (71152) .....	23
4OA3 Event Follow-up (71153).....	27
4OA5 Other Activities.....	27
4OA6 Management Meetings .....	28
4OA7 Licensee-Identified Violations .....	28
SUPPLEMENTAL INFORMATION .....	1
KEY POINTS OF CONTACT .....	1
LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED .....	2
LIST OF DOCUMENTS REVIEWED.....	3
LIST OF ACRONYMS USED .....	7

## SUMMARY OF FINDINGS

IR 05000237/2008-004, 05000249/2008-004; 07/01/2008 - 09/30/2008; Dresden Nuclear Power Station, Units 2 & 3, Surveillance Testing, and Identification and Resolution of Problems.

This report covers a three-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. Two Green findings were identified by the inspectors. One of the findings was considered a NCV of NRC regulations. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

### A. NRC-Identified and Self-Revealed Findings

#### Cornerstone: Initiating Events

- Green. A performance deficiency for the spill of contaminated water and the unexpected spread of contamination on multiple occasions was self revealed by additional spills in August 2008. The failure to clear a blockage in the floor drain system in a timely manner caused the Unit 2 reactor building floor drains to overflow at least four times in nine months. No violation of regulatory requirements occurred. As part of the corrective actions, the licensee created WO 1160517, "Operations Venting Core Spray Leads to Contaminated Area," to hydrolaze the floor drains in the Unit 2 reactor building in order to clear the blockage.

Using the guidance contained in IMC 0612, "Power Reactor Inspection Reports." Appendix B, "Issue Disposition Screening," dated September 20, 2007, the inspectors determined that the finding could be reasonably viewed as a precursor to a significant event. The inspectors evaluated the finding using IMC 0609, Appendix M, "Significance Determination Process Using Qualitative Criteria," dated December 22, 2006. The inspectors used a worst-case bounding evaluation that assumed the loss of various pieces of equipment in the plant. As a result, the risk significance of the inspection finding was determined to be of very low safety significance (Green). The inspectors determined that this issue affected the cross-cutting area of Problem Identification and Resolution because the licensee failed to take corrective actions to address an adverse trend in a timely manner. P.1.(d) (Section 40A2)

#### Cornerstone: Mitigating Systems

- Green. The inspectors identified a NCV of Technical Specification (TS) 5.4.1 for the failure to provide an adequate procedure for the verification of correct installation and restoration of equipment during instrument maintenance surveillance tests in June and August 2008. As part of the corrective actions, the licensee included a task to identify affected instrument surveillance procedures and generate a work down curve for revising the affected procedures.

Using IMC 0612, Appendix E, "Examples of Minor Violations," issued on September 20, 2007, the inspectors determined that there were no similar examples to

this finding in Appendix E. The inspectors referenced IMC 0612, Appendix B, "Issue Screening," dated September 20, 2007. The inspectors determined that the finding was more than minor based on Section 3, (2), "If left uncorrected would the finding become a more significant safety concern." The inspectors determined that the failure to perform an independent verification that a testing configuration had been returned to normal could result in the inability of a system or component to perform its function which would be a more significant safety concern. No systems had been incorrectly returned to service as a result of the inadequate procedure and, therefore, this violation had very low safety significance. The inspectors did not identify a cross-cutting issue for this finding that was separate from the finding itself for inadequate procedures. (Section 1R22)

**B. Licensee-Identified Violations**

Two violations of very low safety significance, which were identified by the licensee, have been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's CAP. These violations and corrective actions are listed in Section 4OA7 of this report.

## **REPORT DETAILS**

### **Summary of Plant Status**

#### **Unit 2**

On September 7, 2008, power was reduced to approximately 58 percent to perform turbine valve testing, control rod drive scram time testing, a control rod pattern adjustment, isolation condenser heat capacity testing, and various other activities, then extended due to issues with the feedwater level control system. The unit returned to full power on September 9, 2008.

On September 9, 2008, power was reduced to 70 percent to perform isolation condenser heat capacity testing. The unit returned to full power on September 10, 2008.

On September 12, 2008, power was reduced to 62 percent to perform isolation condenser heat capacity testing, and the unit returned to full power on the same day.

On September 13, 2008, power was reduced to 62 percent to perform isolation condenser heat capacity testing, and the unit returned to full power on the same day.

On September 23, 2008, power was reduced to 84 percent due to a failure of the 2B reactor feedwater pump seal and remained at this level.

On September 24, 2008, the unit was taken offline to support D2F49 outage. The unit remained offline for the remainder of the month.

#### **Unit 3**

On August 9, 2008, load was reduced to 85 percent to perform turbine valve testing, a control rod pattern adjustment, and other activities. The unit returned to full power on the same day.

On August 17, 2008, power was reduced to 26 percent to perform a drywell entry to address the blockage of the drywell floor drain sump pump and the inability to pump liquid. The unit returned to full power on August 18, 2008.

On August 23, 2008, power was reduced to 89 percent to perform a control rod adjustment, and the unit returned to full power on the same day.

On September 5, 2008, power was reduced to 86 percent to perform a control rod adjustment, and the unit returned to full power on the same day.

On September 17, 2008, the unit began fuel coastdown, and is expected to decrease approximately 4 MWe per day until the refueling outage begins in November.

## 1. REACTOR SAFETY

### 1R01 Adverse Weather Protection (71111.01)

#### .1 External Flooding

##### a. Inspection Scope

The inspectors evaluated the design, material condition, and procedures for coping with the design basis probable maximum flood. The evaluation included a review to check for deviations from the descriptions provided in the Updated Final Safety Analysis Report (UFSAR) for features intended to mitigate the potential for flooding from external factors. As part of this evaluation, the inspectors checked for obstructions that could prevent draining and determined that barriers required to mitigate the flood were in place and operable. Additionally, the inspectors performed a walkdown of the protected area to identify any modification to the site which would inhibit site drainage during a probable maximum precipitation event or allow water ingress past a barrier. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one external flooding sample as defined in Inspection Procedure (IP) 71111.01-05.

##### b. Findings

No findings of significance were identified.

### 1R04 Equipment Alignment (71111.04)

#### .1 Quarterly Partial System Walkdowns

##### a. Inspection Scope

The inspectors performed partial system walkdowns of the following risk-significant systems:

- 3A core spray, 3B out-of-service, for preventative maintenance;
- 2A core spray, 2B out-of-service for preventative maintenance;
- 2B core spray, 2A out-of-service for high point vent installation; and
- Unit 3 high pressure coolant injection and isolation condenser out-of-service for reactor building platform removal.

The inspectors selected these systems based on their risk-significance relative to the Reactor Safety Cornerstones at the time they were inspected. The inspectors attempted to identify any discrepancies that could impact the function of the system, and, therefore, potentially increase risk. The inspectors reviewed applicable operating procedures, system diagrams, UFSAR, TS requirements, outstanding work orders, condition reports, and the impact of ongoing work activities on redundant trains of equipment in order to identify conditions that could have rendered the systems incapable of performing their intended functions. The inspectors also walked down accessible portions of the systems to verify system components and support equipment were aligned correctly and

operable. The inspectors examined the material condition of the components and observed operating parameters of equipment to verify that there were no obvious deficiencies. The inspectors also verified that the licensee had properly identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and entered them into the CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment.

These activities constituted four partial system walkdown samples as defined in IP 71111.04-05.

b. Findings

No findings of significance were identified.

.2 Semi-Annual Complete System Walkdown

a. Inspection Scope

On September 4, 2008, the inspectors performed a complete system alignment inspection of the Unit 3 low pressure coolant injection system to verify the functional capability of the system. This system was selected because it was considered both safety-significant and risk-significant in the licensee's probabilistic risk assessment. The inspectors walked down the system to review mechanical and electrical equipment line ups, electrical power availability, system pressure and temperature indications, as appropriate, component labeling, component lubrication, component and equipment cooling, hangers and supports, operability of support systems, and to ensure that ancillary equipment or debris did not interfere with equipment operation. A review of a sample of past and outstanding work orders (WOs) was performed to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the CAP database to ensure that system equipment alignment problems were being identified and appropriately resolved. Documents reviewed are listed in the Attachment.

These activities constituted one complete system walkdown sample as defined in IP 71111.04-05.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Routine Resident Inspector Tours (71111.05Q)

a. Inspection Scope

The inspectors conducted fire protection walkdowns which were focused on availability, accessibility, and the condition of firefighting equipment in the following risk-significant plant areas:

- Fire Zone 11.1.3, elevation 476', Unit 3 reactor building high pressure coolant injection room;
- Fire Zone 1.1.5D, elevation 589', Unit 3 reactor standby liquid control area;
- Fire Zone 9.0.A, elevation 517', Unit 2 turbine building diesel generator; and
- Fire Zone 7.0.B, elevation 551', Unit 3 battery room.

The inspectors reviewed areas to assess if the licensee had implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant, effectively maintained fire detection and suppression capability, maintained passive fire protection features in good material condition, and had implemented adequate compensatory measures for out of service, degraded or inoperable fire protection equipment, systems, or features in accordance with the licensee's fire plan. The inspectors selected fire areas based on their overall contribution to internal fire risk as documented in the plant's Individual Plant Examination of External Events with later additional insights, their potential to impact equipment which could initiate or mitigate a plant transient, or their impact on the plant's ability to respond to a security event. Using the documents listed in the Attachment, the inspectors verified that fire hoses and extinguishers were in their designated locations and available for immediate use; that fire detectors and sprinklers were unobstructed, that transient material loading was within the analyzed limits; and fire doors, dampers, and penetration seals appeared to be in satisfactory condition. The inspectors also verified that minor issues identified during the inspection were entered into the licensee's CAP. Documents reviewed are listed in the Attachment to this report.

These activities constituted four quarterly fire protection inspection samples as defined in IP 71111.05-05.

b. Findings

No findings of significance were identified.

.2 Annual Fire Protection Drill Observation (71111.05A)

a. Inspection Scope

On July 15, 2008, the inspectors observed a fire brigade activation for a simulated fire in the Unit 1 diesel fire pump day tank building. Based on this observation, the inspectors evaluated the readiness of the plant fire brigade to fight fires. The inspectors verified that the licensee staff identified deficiencies; openly discussed them in a self-critical manner at the drill debrief, and took appropriate corrective actions. Specific attributes evaluated were: (1) proper wearing of turnout gear and self-contained breathing apparatus; (2) proper use and layout of fire hoses; (3) employment of appropriate fire fighting techniques; (4) sufficient firefighting equipment brought to the scene; (5) effectiveness of fire brigade leader communications, command, and control; (6) search for victims and propagation of the fire into other plant areas; (7) smoke removal operations; (8) utilization of pre planned strategies; (9) adherence to the pre planned drill scenario; and (10) drill objectives. Documents reviewed are listed in the Attachment to this report.

These activities constituted one annual fire protection drill observation inspection sample as defined by IP 71111.05-05.

b. Findings

No findings of significance were identified.

1R06 Flooding (71111.06)

.1 Internal Flooding

a. Inspection Scope

The inspectors reviewed selected risk important plant design features and licensee procedures intended to protect the plant and its safety related equipment from internal flooding events. The inspectors reviewed flood analyses and design documents, including the UFSAR, engineering calculations, and abnormal operating procedures to identify licensee commitments. The specific documents reviewed are listed in the Attachment to this report. In addition, the inspectors reviewed licensee drawings to identify areas and equipment that may be affected by internal flooding caused by the failure or misalignment of nearby sources of water, such as the fire suppression or the circulating water systems. The inspectors also reviewed the licensee's corrective action documents with respect to past flood-related items identified in the CAP to verify the adequacy of the corrective actions. The inspectors performed a walkdown of the following plant area(s) to assess the adequacy of watertight doors and verify drains and sumps were clear of debris and were operable, and that the licensee complied with its commitments:

- Unit 3 reactor building corner rooms.

This inspection constituted one internal flooding sample as defined in IP 71111.06-05.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Regualification Program (71111.11Q)

.1 Resident Inspector Quarterly Review (71111.11Q)

a. Inspection Scope

On date September 22, 2008, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator requalification examinations to verify that operator performance was adequate, evaluators were identifying and documenting crew performance problems and training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

- licensed operator performance;
- crew's clarity and formality of communications;

- ability to take timely actions in the conservative direction;
- prioritization, interpretation, and verification of annunciator alarms;
- correct use and implementation of abnormal and emergency procedures;
- control board manipulations;
- oversight and direction from supervisors; and
- ability to identify and implement appropriate TS actions and Emergency Plan actions and notifications.

The crew's performance in these areas was compared to pre-established operator action expectations and successful critical task completion requirements.

This inspection constitutes one quarterly licensed operator requalification program sample as defined in IP 71111.11.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

.1 Routine Quarterly Evaluations

a. Inspection Scope

The inspectors evaluated degraded performance issues involving the following risk-significant systems:

- Unit 2 core spray; and
- Unit 3 core spray.

The inspectors reviewed events such as where ineffective equipment maintenance had resulted in valid or invalid automatic actuations of engineered safeguards systems and independently verified the licensee's actions to address system performance or condition problems in terms of the following:

- implementing appropriate work practices;
- identifying and addressing common cause failures;
- scoping of systems in accordance with 10 CFR 50.65(b) of the maintenance rule;
- characterizing system reliability issues for performance;
- charging unavailability for performance;
- trending key parameters for condition monitoring;
- ensuring 10 CFR 50.65(a)(1) or (a)(2) classification or re-classification; and
- verifying appropriate performance criteria for structures, systems, and components (SSCs)/functions classified as (a)(2) or appropriate and adequate goals and corrective actions for systems classified as (a)(1).

The inspectors assessed performance issues with respect to the reliability, availability, and condition monitoring of the system. In addition, the inspectors verified maintenance effectiveness issues were entered into the CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment.

This inspection constitutes two quarterly maintenance effectiveness samples as defined in IP 71111.12-05.

b. Findings

No findings of significance were identified.

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

.1 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors reviewed the licensee's evaluation and management of plant risk for the maintenance and emergent work activities affecting risk-significant and safety-related equipment listed below to verify that the appropriate risk assessments were performed prior to removing equipment for work:

- Transfer transformer 86 to automatic tap change control;
- 2B core spray out-of-service;
- Emergent work on 3B standby liquid control due to broken Schraeder valve; and
- U3 high pressure coolant injection protected pathway while setting-up alternate method to monitor drywell floor drain leakage.

These activities were selected based on their potential risk-significance relative to the Reactor Safety Cornerstones. As applicable for each activity, the inspectors verified that risk assessments were performed as required by 10 CFR 50.65(a)(4) and were accurate and complete. When emergent work was performed, the inspectors verified that the plant risk was promptly reassessed and managed. The inspectors reviewed the scope of maintenance work, discussed the results of the assessment with the licensee's probabilistic risk analyst or shift technical advisor, and verified plant conditions were consistent with the risk assessment. The inspectors also reviewed TS requirements and walked down portions of redundant safety systems, when applicable, to verify risk analysis assumptions were valid and applicable requirements were met.

These activities constituted four samples as defined by IP 71111.13-05.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

.1 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following issues:

- IR 806157, "U2 Diesel Generator Fuel Oil Day Tank Level Less Than Required;"

- IR 807914, "Failure of DWFDS;"
- IR 807780, "Air Identified in 2A Core Spray Discharge Line;" and
- IR 779061, "AEER Halon Pilot Hose Not Connected."

The inspectors selected these potential operability issues based on the risk-significance of the associated components and systems. The inspectors evaluated the technical adequacy of the evaluations to ensure that 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 TS and UFSAR to the licensee'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. The inspectors determined, where appropriate, compliance with bounding limitations associated with the evaluations. Additionally, the inspectors also reviewed a sampling of corrective action documents to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations. Documents reviewed are listed in the Attachment.

This inspection constitutes four samples as defined in IP 71111.15-05.

b. Findings

The enforcement aspects of IR 779061, "AEER Halon Pilot Hose Not Connected," are discussed in Section 4OA7.

1R18 Plant Modifications (71111.18)

.1 Permanent Plant Modifications

a. Inspection Scope

The following engineering design packages were reviewed and selected aspects were discussed with engineering personnel:

- DRE07-0016, "Evaluation of Turbine Building Floor Elevation 561' and Superstructure for the Loads Associated with the Installation of the Condensate Filtration System EC [engineering change] 357368; and
- EC 353371, "Revise EDG [emergency diesel generator] Day Tank Level Switch Setpoints.

These documents and related documentation were reviewed for adequacy of the associated 10 CFR 50.59 safety evaluation screening, consideration of design parameters, implementation of the modification, post-modification testing, and relevant procedures, design, and licensing documents were properly updated. The inspectors observed ongoing and completed work activities to verify that installation was consistent with the design control documents. The first modification added a 100 percent condensate filtration system and the second modification changed the set point for the EDG day tank fuel transfer pump.

This inspection constituted two permanent plant modification samples as defined in IP 71111.18-05.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

.1 Post-Maintenance Testing

a. Inspection Scope

The inspectors reviewed the following post-maintenance (PM) activities to verify that procedures and test activities were adequate to ensure system operability and functional capability:

- WO# 1141168-01, "U1 Diesel Fire Pump PMT [post-maintenance test] After Ten Year Overhaul;"
- WO# 453816-01, "Mechanical Maintenance Disassemble & Inspect Core Spray Flow Stop Check Valve;"
- WO# 01055560-02, "Repair Pipe Cap Leak and Replace 2-1499-54 valve;" and
- WO# 658486, "D2 5Y TS Isolation Condenser Heat Removal Test."

These activities were selected based upon the structure, system, or component's ability to impact risk. The inspectors evaluated these activities for the following (as applicable): the effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed; acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate; tests were performed as written in accordance with properly reviewed and approved procedures; equipment was returned to its operational status following testing (temporary modifications or jumpers required for test performance were properly removed after test completion), and test documentation was properly evaluated. The inspectors evaluated the activities against TS, the UFSAR, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications to ensure that the test results adequately ensured that the equipment met the licensing basis and design requirements. In addition, the inspectors reviewed corrective action documents associated with post-maintenance tests to determine whether the licensee was identifying problems and entering them in the CAP and that the problems were being corrected commensurate with their importance to safety. Documents reviewed are listed in the Attachment to this report.

This inspection constitutes four samples as defined in IP 71111.19-05.

b. Findings

No findings of significance were identified.

## 1R20 Outage Activities (71111.20)

### .1 Forced Outage Activities

#### a. Inspection Scope

The inspectors reviewed the forced outage plan for the Unit 2 forced outage (D2F49) conducted September 24 to October 1, 2008, to confirm that the licensee had appropriately considered risk, industry experience, and previous site-specific problems in developing and implementing a plan that assured maintenance of defense-in-depth. During the forced outage, the inspectors observed portions of the shutdown and cooldown processes and monitored licensee controls over the outage activities listed below. Documents reviewed during the inspection are listed in the Attachment to this report.

- Licensee configuration management, including maintenance of defense-in-depth commensurate with the Outage Safety Plan (OSP) for key safety functions and compliance with the applicable TS when taking equipment out-of-service.
- Implementation of clearance activities and confirmation that tags were properly hung and equipment appropriately configured to safely support the work or testing.
- Installation and configuration of reactor coolant pressure, level, and temperature instruments to provide accurate indication, accounting for instrument error.
- Controls over the status and configuration of electrical systems to ensure that TS and OSP requirements were met, and controls over switchyard activities.
- Monitoring of decay heat removal processes, systems, and components.
- Reactor water inventory controls including flow paths, configurations, and alternative means for inventory addition, and controls to prevent inventory loss.
- Controls over activities that could affect reactivity.
- Maintenance of secondary containment as required by TS.
- Startup and ascension to full power operation, tracking of startup prerequisites.
- Licensee identification and resolution of problems related to forced outage activities.

This inspection constituted one outage sample as defined in IP 71111.20-05.

#### b. Findings

No findings of significance were identified.

## 1R22 Surveillance Testing (71111.22)

### .1 Surveillance Testing

#### a. Inspection Scope

The inspectors reviewed the test results for the following activities to determine whether risk-significant systems and equipment were capable of performing their intended safety function and to verify testing was conducted in accordance with applicable procedural and TS requirements:

- WO 1133603-01, "Operation D2 Quarter TS Core Spray Pump Test with Torus Available for In Service Test," (IST);
- DOP 2000-24, "Drywell Sump Operation," Revision 16 (RCS);
- WO 1166301-01, "Unit 3 Isolation Condenser Steam/Condensate Line High Flow Calibration;"
- DOS 0202-02, "Jet Pump Operability and Degradation," Revision 27; and
- DOP 2300-03, "High Pressure Coolant Injection System Operability and Quarterly IST Verification Test."

The inspectors observed in plant activities and reviewed procedures and associated records to determine the following:

- did preconditioning occur;
- were the effects of the testing adequately addressed by control room personnel or engineers prior to the commencement of the testing;
- were acceptance criteria clearly stated, demonstrated operational readiness, and consistent with the system design basis;
- plant equipment calibration was correct, accurate, and properly documented;
- as-left setpoints were within required ranges; and the calibration frequencies were in accordance with TSs, the USAR, procedures, and applicable commitments;
- measuring and test equipment calibration was current;
- test equipment was used within the required range and accuracy; applicable prerequisites described in the test procedures were satisfied;
- test frequencies met TS requirements to demonstrate operability and reliability; tests were performed in accordance with the test procedures and other applicable procedures; jumpers and lifted leads were controlled and restored where used;
- test data and results were accurate, complete, within limits, and valid;
- test equipment was removed after testing;
- where applicable for inservice testing activities, testing was performed in accordance with the applicable version of Section XI, American Society of Mechanical Engineers code, and reference values were consistent with the system design basis;
- where applicable, test results not meeting acceptance criteria were addressed with an adequate operability evaluation or the system or component was declared inoperable;
- where applicable for safety-related instrument control surveillance tests, reference setting data were accurately incorporated in the test procedure;
- where applicable, actual conditions encountering high resistance electrical contacts were such that the intended safety function could still be accomplished;
- prior procedure changes had not provided an opportunity to identify problems encountered during the performance of the surveillance or calibration test;
- equipment was returned to a position or status required to support the performance of its safety functions; and
- all problems identified during the testing were appropriately documented and dispositioned in the CAP.

Documents reviewed are listed in the Attachment to this report.

This inspection constituted 3 routine surveillance testing samples, 1 inservice testing sample, 1 reactor coolant system leak detection inspection sample, and no containment isolation valve samples as defined in IP 71111.22, Sections -02 and -05.

b. Findings

Introduction: The inspectors identified a NCV of TS Paragraph 5.4.1 for the failure to provide an adequate procedure for several instrument maintenance surveillance tests. This issue was determined to be of very low safety significance, "Green."

Description: The inspectors observed the performance of DIS 0263-02, "Unit 2 ATWS [anticipated transient without scram] RPT/ARI [recirculation pump trip/alternate rod insertion] Pressure MTU [master trip unit] Channel Functional Test," Revision 11, on June 13, 2008. There were no verification requirements of any kind in the procedure when the surveillance test was completed and the equipment was returned to service. A verification of the switch lineup on the calibration unit upon the return to service of the equipment was required by HU-AA-101 in Section 4.3.1. The foreman documented the need to evaluate this issue in IR 786449.

The inspectors observed the performance DIS 1300-07, Unit 3 Isolation Condenser Steam/Condensate Line High Flow Calibration," Revision 22, on August 7, 2008. Surveillance procedure DIS 1300-07 required the installation of four jumper cables which bypass Isolation Condenser primary containment isolation valve (PCIV) isolation relays 3-595-115A and 3-595-115B. The actuation of one trip system will cause the closure of all PCIVs associated with the isolation condenser (Group 5 isolation). In each jumper was an on-off toggle switch. Prior to the installation of the jumpers there was a step in the procedure to verify the toggle switches are off (open). The surveillance test procedure clearly states where the jumpers are to be installed and there is a picture of the relays and where the installation points are. The inspectors observed that the switches were verified off and jumpers were installed using a separate peer check for both the switch position verification and the jumper installation. Both Instrument maintenance technicians performing the task reviewed the procedure, the switch positions, and the installation points prior to installation of the jumpers. These actions were performed by the Instrument maintenance technicians together, not apart in time or action which constituted a peer check, not a concurrent verification (CV) or an independent verification (IV). The surveillance procedure did not require an independent verification of the jumper installation or removal. The foreman documented the need to evaluate this issue in IR 805061.

Analysis: The inspectors determined that the failure to independently verify the correct installation and restoration of equipment was a performance deficiency warranting a significance evaluation. Using IMC 0612, Appendix E, "Examples of Minor Violations," issued on September 20, 2007, the inspectors determined that there were no similar examples to this finding in Appendix E. The inspectors referenced Inspection Manual Chapter (IMC) 0612, Appendix B, "Issue Screening," dated September 20, 2007. The inspectors determined that the finding was more than minor based on Section 3, (2), "If left uncorrected would the finding become a more significant safety concern." The inspectors determined that the failure to perform an independent verification that a testing configuration had been returned to normal could result in the inability of a system or component to perform its function which would be a more significant safety concern.

Even though instrument maintenance technicians were performing peer checks when restoring the system to normal, using peer checks in the past at the station has not always resulted in the correct equipment being manipulated. In addition, the licensee identified that there were as many as 100 procedures that did not have required documented independent verifications upon return to service of the effected systems. The inspectors did not identify a cross-cutting issue for this finding that was separate from the finding itself for inadequate procedures.

The inspectors completed a Phase 1 significance determination of this issue using IMC 0609, "Significance Determination Process," Appendix A, Attachment 0609.04, dated January 10, 2008. The inspectors determined that the finding affected both the mitigating systems and barrier cornerstones. Per Exhibit 1, Phase 1, Step 1.1.(3) if the finding affects multiple cornerstones the finding should be assigned to the dominant risk of the finding. The inspectors determined that the dominant risk would be associated with the mitigating system cornerstone. The inspectors answered all 5 questions in Table 4a under the mitigating system cornerstone, "No," and this finding screened as Green.

Enforcement: Technical Specification 5.4.1, states in part, written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978.

Regulatory Guide 1.33, Revision 2, Appendix A, February 1978, paragraph 1.c lists equipment control as an applicable procedure.

The Exelon Quality Assurance Topical Report, NO-AA-10, Revision 81, Appendix C, Paragraph 1.1, commits the licensee to American Nuclear Standard ANS 3.2/ANSI N18.7 – 1988.

American Nuclear Standard ANS 3.2/ANSI N18.7 – 1988, paragraph 5.2.6, Equipment Control, states in part, temporary modifications, such as temporary bypass lines, electrical jumpers, lifted electrical leads, and temporary trip point settings, shall be controlled by approved procedures which shall include requirements for the period of time for which the temporary modification is in effect, and a requirement for independent verification by either a second person or by a functional test which conclusively proves the proper installation or removal of the temporary modification. A log, or other documented evidence, shall be maintained of the current status of such temporary modifications.

Contrary to the above, on June 13, 2008, and August 7, 2008, the licensee did not have written procedures established to perform independent verifications of the installation or restoration of electrical jumpers and temporary trip point settings during the performance of surveillance test procedures of DIS 0263-02, "Unit 2 ATWS RPT/ARI Pressure MTU Channel Functional Test," Revision 11; and DIS 1300-07, Unit 3 Isolation Condenser Steam/Condensate Line High Flow Calibration," Revision 22.

This issue was entered in the licensee's CAP as IR 786449 and IR 805061. The licensee's corrective actions included a task to identify affected instrument surveillance procedures and generate a work down curve for revising the affected procedures. Because this violation was of very low safety significance and it was entered into the

licensee's CAP, this violation is being treated as a NCV, consistent with Section VI.A.1 or the NRC Enforcement Policy. **(NCV 05000237/2008004-01; 05000249/2008004-01)**

1EP6 Drill Evaluation (71114.06)

.1 Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors evaluated the conduct of Op Exam G-P2, Revision 3, Dated 9/08. The inspectors also attended the licensee drill critiques to compare any inspector-observed weakness with those identified by the licensee staff in order to evaluate the critiques and to verify whether the licensee staff was properly identifying weaknesses and entering them into the CAP. As part of the inspection, the inspectors reviewed the drill packages and other documents listed in the Attachment to this report.

This inspection constitutes one sample as defined in IP 71114.06-05.

b. Findings

No findings of significance were identified.

**2. RADIATION SAFETY**

**Cornerstone: Occupational Radiation Safety**

2OS1 Access Control to Radiologically Significant Areas (71121.01)

.1 Job-In-Progress Review and Review of Work Practices in Radiologically Significant Areas

a. Inspection Scope

The inspectors reviewed preparatory activities on the refuel floor associated with the movement of the old Unit 2 and 3 steam dryers, including the high radiation area controls and other activities which presented the greatest radiological risk to workers.

The inspectors reviewed the radiological job requirements for the dryer moves, including radiation work permit (RWP) requirements and the work tasking plan, and evaluated the radiological controls, job coverage and radiation worker practices. The inspectors attended the pre-job briefings for dryer move related activities to assess the adequacy of the information exchanged. Job performance was observed with respect to these requirements to assess whether radiological conditions in the work area were adequately communicated to workers through pre-job briefings, postings and through direct and electronic (remote) surveillance.

During job performance observations, the inspectors evaluated the adequacy of radiological controls including required radiation surveys. Radiation protection oversight was evaluated, including the effectiveness of remote and continuous direct surveillance job coverage techniques.

No samples were accredited for this inspection effort.

b. Findings

No findings of significance were identified.

.2 High Risk Significant and High Radiation Area Controls

a. Inspection Scope

The inspectors discussed with radiation protection (RP) supervisors and technicians the actions that were to be taken to ensure affected areas were evacuated prior to dryer moves and to prevent unauthorized entry into the high and locked high radiation areas created during the moves. Subsequently, the inspectors independently evaluated the effectiveness of those mechanisms and the associated radiological controls during the dryer moves for compliance with the requirements in 10 CFR 20.1601 and 20.1903. The inspectors conducted walkdowns of the radiological boundaries associated with the moves to assess the adequacy of the barriers and controls.

No samples were accredited for this inspection effort.

b. Findings

No findings of significance were identified.

2OS2 As-Low-As-Is-Reasonably-Achievable Planning And Controls (71121.02)

.1 Radiological Work Planning and Exposure Performance

a. Inspection Scope

The inspectors reviewed the licensee's as-low-as-is-reasonably-achievable (ALARA) plan for the dryer moves along with the associated exposure estimates to determine if they were adequately developed so as to control worker exposure. Use of remote technologies for monitoring the occupational dose to workers and for environmental monitoring to demonstrate compliance with public dose limits in 10 CFR 20.1301 was assessed.

Following the dryer moves, the inspectors reviewed the collective dose results for the overall work activity and for individual workers involved and the dose to the public to determine if the dryer moves were executed consistent with the licensee's plan and met regulatory dose limits.

No samples were accredited for this inspection effort.

b. Findings

No findings of significance were identified.

## Cornerstone: Public Radiation Safety

### 2PS3 Radiological Environmental Monitoring Program and Radioactive Material Control Program (71122.03)

#### .1 Inspection Planning

##### a. Inspection Scope

The inspectors reviewed the licensee's 2006 and 2007 Annual Radiological Environmental Operating Reports, the results of radiological environmental monitoring analyses for the first half of 2008, and the most recent licensee assessment results to verify that the Radiological Environmental Monitoring Program (REMP) was implemented as required by the licensee's Offsite Dose Calculation Manual (ODCM). The inspectors reviewed the environmental monitoring reports for changes to the ODCM with respect to environmental monitoring, commitments in terms of sampling locations, monitoring and measurement frequencies, land use census, contract laboratory interlaboratory comparison program, and analysis of radiological environmental sample data. The inspectors reviewed the ODCM to identify the environmental monitoring stations to evaluate station locations and the types of samples collected from each to determine if they were consistent with the ODCM and NRC guidance contained in Regulatory Guide 1.21, "Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes, and Releases of Radioactive Materials in Liquid and Gaseous Effluents from Light Water Cooled Nuclear Power Plants," in Regulatory Guide 4.8, "Environmental TSs for Nuclear Power Plants," and in associated NRC Branch Technical Positions and NUREG documents. The inspectors also reviewed licensee self-assessments, audits, licensee event reports, and interlaboratory comparison program results. The inspectors reviewed the Updated Final Safety Analysis Report (UFSAR) for information regarding the environmental monitoring program and for meteorological monitoring instrumentation. The inspectors reviewed the scope of the licensee's audit program to verify that it met the requirements of 10 CFR 20.1101(c).

This inspection constitutes one sample as defined in IP 71122.03-5.

##### b. Findings

No findings of significance were identified.

#### .2 Onsite Inspection

##### a. Inspection Scope

The inspectors walked down six of the licensee's nine "indicator" environmental air sampling stations, one of three "special" air sampling stations, two river water sample compositors, and approximately 25 percent of the thermoluminescent dosimeter (TLD) monitoring stations, to determine if they were located as described in the ODCM, and to assess equipment material condition. Each station walked down was also examined to assess monitoring station orientation relative to plant effluent release locations, to evaluate equipment configuration, and to determine whether vegetation growth control allowed for the collection of representative samples. In addition, the inspectors

evaluated well water, surface water, and sediment sampling locations to verify the suitability of each in complying with REMP requirements.

This inspection constitutes one sample as defined in IP 71122.03-5.

The inspectors observed the collection of a residential well water sample and the change-out of air particulate and charcoal cartridges at environmental monitoring locations to determine whether environmental sampling was representative of the release pathways as specified in the ODCM and whether sampling techniques were consistent with the licensee's procedure.

This inspection constitutes one sample as defined in IP 71122.03-5.

Based on direct observations and records review, the inspectors verified that the meteorological instruments at the licensee's meteorological tower were operable, calibrated, and maintained in accordance with the UFSAR, NRC Safety Guide 23, and licensee procedures. The inspectors verified that the meteorological data displays and data communication links were operable. The inspectors reviewed real time meteorological data (i.e., wind speed, wind direction, and delta temperature) provided by the licensee's communication links and discussed system capabilities with the licensee to verify that data was sampled and compiled consistent with the aforementioned NRC Safety Guide.

This inspection constitutes one sample as defined in IP 71122.03-5.

The inspectors reviewed each event documented in the 2006 and 2007 Annual Radiological Environmental Operating Reports, which involved a missed sample, inoperable sampler, lost TLD, or anomalous measurement for the cause, and corrective actions and conducted a review of the licensee's assessment of any positive sample results (i.e., licensed radioactive material detected above the lower-limits-of-detection (LLDs)). The inspectors reviewed the associated radioactive effluent release data that was the likely source of the released material, if applicable.

This inspection constitutes one sample as defined in IP 71122.03-5.

The inspectors reviewed changes made by the licensee to the ODCM as a result of changes to the land use census, air sampler station modifications or other modifications to the location or the type of environmental sampling since the last inspection. The inspectors reviewed technical justifications for changed sampling locations, as applicable. The inspectors verified that the licensee performed the reviews required to ensure that the changes did not affect its ability to monitor the impacts of radioactive effluent releases on the environment.

This inspection constitutes one sample as defined in IP 71122.03-5.

The inspectors reviewed flow verification and maintenance records for the licensee's environmental air sample pumps, including the calibration of the primary and back-up rotameters used for pump flow measurements. The inspectors reviewed the results of the REMP sample vendor's laboratory quality control program including the interlaboratory comparison program to verify the adequacy of the vendor's program and

the corrective actions for any identified deficiencies. The inspectors verified that the appropriate detection sensitivities were achieved by the vendor laboratory for counting samples (i.e., the samples met ODCM required LLDs). The inspectors reviewed technical evaluations/audits the licensee performed of its vendor laboratory since the last inspection or were otherwise performed as part of a joint nuclear utilities audit, as applicable. Additionally, the inspectors reviewed the results of the licensee's interlaboratory cross-check comparison program for its gamma spectroscopy equipment to verify the adequacy of effluent sample analyses performed by the licensee. The inspectors reviewed the licensee's determination of any bias to the data and the overall effect on the REMP. The inspectors reviewed Nuclear Oversight Organization audit results of the program to determine whether the licensee met ODCM requirements.

This inspection constitutes one sample as defined in IP 71122.03-5.

b. Findings

No findings of significance were identified.

.3 Unrestricted Release of Material from the Radiologically Controlled Area

a. Inspection Scope

The inspectors observed the principal location where the licensee monitors potentially contaminated material leaving the radiologically controlled area (RCA) and evaluated the procedures and practices used for control, survey, and release of materials from its monitoring areas. The inspectors observed RP staff survey and release material for unrestricted use to verify that the surveys were performed in accordance with plant procedures. Additionally, the inspectors questioned members of the RP staff who conduct surveys for the unconditional release of material to determine whether they understood the proper methods, techniques and the radiation survey equipment to use for various unconditional release applications.

This inspection constitutes one sample as defined in IP 71122.03-5.

The inspectors verified that the radiation monitoring instrumentation was appropriate for the radiation types present and was calibrated with appropriate radiation sources. The inspectors reviewed the licensee's criteria for the survey and release of potentially contaminated material and verified that there was guidance on how to respond to an alarm, which indicates the presence of licensed radioactive material. The inspectors reviewed the licensee's equipment to ensure the radiation detection sensitivities were consistent with the NRC guidance contained in Circular 81-07 and Information Notice 85-92 for surface contamination and in Health Physics Position (HPPOS) No. 221 for volumetrically contaminated material. The inspectors reviewed the licensee's unconditional release program to determine if difficult-to-detect radionuclides including those that decay via electron capture were identified and whether the licensee assessed the dose impact of those nuclides. The inspectors reviewed the licensee's procedures and records to verify that the radiation detection instrumentation was used at its typical sensitivity level based on appropriate counting parameters (i.e., counting times and background radiation levels). The inspectors verified that the licensee had not established a "release limit" by altering the instrument's typical

sensitivity through such methods as raising the energy discriminator level or locating the instrument in a high radiation background area.

This inspection constitutes one sample as defined in IP 71122.03-5.

b. Findings

No findings of significance were identified.

.4 Identification and Resolution of Problems

a. Inspection Scope

The inspectors reviewed the licensee's self-assessments, audits, Licensee Event Reports, and Special Reports, as applicable related to the radiological environmental monitoring and unconditional release programs since the last inspection to determine if identified problems were entered into the CAP for resolution. The inspectors also verified that the licensee's self-assessment program was capable of identifying repetitive deficiencies or significant individual deficiencies in problem identification and resolution.

The inspectors also reviewed corrective action reports related to the REMP and the unconditional release survey program since the previous inspection, interviewed staff and reviewed documents to determine if the following activities were being conducted in an effective and timely manner commensurate with their importance to safety and risk:

- Initial problem identification, characterization, and tracking;
- Disposition of operability/reportability issues;
- Evaluation of safety significance/risk and priority for resolution;
- Identification of repetitive problems;
- Identification of contributing causes;
- Identification and implementation of effective corrective actions;
- Resolution of NCVs tracked in the corrective action system; and
- Implementation/consideration of risk significant operational experience feedback.

This inspection constitutes one sample as defined in IP 71122.03-5.

b. Findings

No findings of significance were identified.

**4. OTHER ACTIVITIES**

40A1 Performance Indicator Verification (71151-05)

.1 Reactor Safety Strategic Area

a. Inspection Scope

The inspectors sampled licensee submittals for the performance indicators (PIs) listed below for the periods indicated. To determine the accuracy of the PI data reported

during those periods, PI definitions and guidance contained in Revisions 4 & 5 of Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline," were used. The following PIs were reviewed:

**Cornerstone: Mitigating Systems**

- Heat Removal System Units 2 and 3;
- Residual Heat Removal System Units 2 and 3; and
- High Pressure Coolant Injection Units 2 and 3.

The inspectors reviewed the licensee's operator narrative logs, plant computer data-point trends of historical isolation condenser data, NRC Integrated Inspection findings, and PI raw data to validate the accuracy of the submittals for the eight quarters of March 2006 through June 2008.

This review represented six inspection samples.

b. Findings

No findings of significance were identified.

.2 Reactor Safety Strategic Area

a. Inspection Scope

The inspectors sampled the licensee's PI submittals for the period indicated below. The inspectors used PI definitions and guidance contained in Revision 5 of NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," to verify the accuracy of the PI data. The following PI was reviewed:

**Cornerstone: Barrier Integrity**

- Reactor Coolant System Specific Activity

The inspectors reviewed Chemistry Department records including isotopic analyses for the period October 2007 – June 2008, to determine if the greatest dose equivalent iodine (DEI) values obtained during steady state operations corresponded to the values reported to the NRC. The inspectors also reviewed selected DEI calculations including the application of dose conversion factors as specified in plant TSs. Sample collection and analyses methods and corresponding station procedures were reviewed and discussed with chemistry staff to determine their adequacy. Additionally, the inspectors accompanied a chemistry technician and observed the collection and preparation of a reactor coolant system sample to evaluate compliance with the licensee's sampling procedure.

These reviews constitute two samples under the Barrier Integrity Cornerstone as defined in IP 71151.

## 4OA2 Identification and Resolution of Problems (71152)

### .1 In-depth Review Annual Sample: Review of Operator Workarounds (OWAs)

#### a. Scope

The inspectors evaluated the licensee's implementation of their process used to identify, document, track, and resolve operational challenges. Inspection activities included, but were not limited to, a review of the cumulative effects of the OWAs on system availability and the potential for improper operation of the system, for potential impacts on multiple systems, and on the ability of operators to respond to plant transients or accidents.

The inspectors performed a review of the cumulative effects of OWAs. The documents listed in the Attachment were reviewed to accomplish the objectives of the inspection procedure. The inspectors reviewed both current and historical operational challenge records to determine whether the licensee was identifying operator challenges at an appropriate threshold, had entered the challenges into the CAP and proposed or implemented appropriate and timely corrective actions which addressed each issue. Reviews were conducted to determine if any operator challenge could increase the possibility of an Initiating Event, if the challenge was contrary to training, required a change from long-standing operational practices, or created the potential for inappropriate compensatory actions. Additionally, all temporary modifications were reviewed to identify any potential effect on the functionality of Mitigating Systems, impaired access to equipment, or required equipment uses for which the equipment was not designed. Daily plant and equipment status logs, degraded instrument logs, and operator aids or tools being used to compensate for material deficiencies were also assessed to identify any potential sources of unidentified operator workarounds.

This review constituted one operator workaround annual inspection sample as defined in IP 71152-05.

#### b. Findings

No findings of significance were identified.

### .2 In-depth Review

Identification and Corrective Actions Associated with IR 806768, "Operations Venting Core Spray Leads to Contaminated Area" and IR 806945, "Water on Floor While Filling 2B Core Spray System."

#### a. Effectiveness of Problem Identification

##### (1) Inspection Scope

The inspectors reviewed IR 806768, "Operations Venting Core Spray Leads to Contaminated Area" and IR 806945, "Water on Floor While Filling 2B Core Spray System" regarding corrective actions associated with IR 700885, "Floor Drain Common Header Plugging."

(2) Issues

None.

b. Prioritization and Evaluation of Issues

(1) Inspection Scope

The inspectors reviewed IR 806768, "Operations Venting Core Spray Leads to Contaminated Area" and IR 806945, "Water on Floor While Filling 2B Core Spray System" regarding corrective actions associated with IR 700885, "Floor Drain Common Header Plugging." The inspectors also reviewed IR 809033, "LPCI Sampling Causes Floor Drain Back-Up," IR 806606, "New Fuel Receipt Delayed Due to Water/Contamination Issues," IR 699809, "Safety: Plant Water Running Onto Workers/Equip (Shaw Id'd)," IR 753695, "Drains Back up and Contaminated Clean Area," DOP 1400-03, "ECCS Fill System," revision 41, OP-DR-108-101-1002, "Operations Department Standards and Expectations," revision 9, and OP-AA-109-101, "Clearance and Tagging," revision 2. In addition, the inspectors interviewed work control personnel.

(2) Issues

In November 2007, work request (WR) 255908, "Floor Drain Common Header Plugging," was generated to clear the blockage in the Unit 2 reactor building floor drains. In response to the WR, Work Order (WO) 1083629, "Floor Drain Common Header Plugging," was created to add a hydrolazing tap in the Unit 2 west low pressure coolant injection (LPCI) corner room, but no action was created to clear the blockage/hydrolaze once the hydrolazing tap was installed. Installation of the hydrolazing tap was completed on August 25, 2008. During this period (November 2007 thru August 2008), at least four spill events in the Unit 2 reactor building occurred (11/15/2007, 3/20/2008, 8/12/2008, and 8/20/2008).

On August 18, 2008, WO 1160517, "Operations Venting Core Spray Leads to Contaminated Area," was created to hydrolaze the floor drains in the Unit 2 reactor building, but the action was not completed by the end of the inspection period.

The inspectors concluded that station management did not properly recognize the backing up of the floor drains as a recurring problem that needed to be addressed. Therefore, the station management neither prioritized nor evaluated this issue sufficiently to prevent recurrence.

c. Effectiveness of Corrective Actions

(1) Inspection Scope

The inspectors reviewed the documents listed in 4OA2.2b.(1) above and interviewed work control personnel.

(2) Issues

On November 20, 2007, WR 255908, "Floor Drain Common Header Plugging," was generated to clear the blockage in the Unit 2 reactor building floor drains. Work Order 1083629, "Floor Drain Common Header Plugging," was created to add a hydrolazing tap in the west LPCI corner room but no action was created to clear the blockage/hydrolaze once the hydrolazing tap was installed. On August 18, 2008, WO 1160517, "Operations Venting Core Spray Leads to Contaminated Area," was created to hydrolaze the floor drains in the Unit 2 reactor building. This task was not completed by the end of the inspection period. Therefore, the effectiveness of the corrective actions can not be evaluated at this time.

d. Findings

Introduction: The inspectors reviewed the spill of contaminated water on multiple occasions and the unexpected spread of contamination which was a self-revealed performance deficiency. The failure to clear a blockage in the Unit 2 floor drain system in a timely manner caused the Unit 2 reactor building floor drains to overflow at least four times in less than a year (nine months). No violation of regulatory requirements occurred.

Description: On November 15, 2007, contractors working in the Unit 2 west LPCI system corner room (497 feet elevation) noticed a significant amount of water coming from the 517 feet elevation through the LPCI hatch opening down to the 497 feet elevation. The water in question was from backed up floor drains on the 517 feet elevation. On November 16, 2007, while draining control rod drive (CRD) hydraulic control unit (HCU) accumulators on Unit 2, the licensee discovered that the header down in the west LPCI corner room was plugged. On November 20, 2007, WR 255908, "Floor Drain Common Header Plugging," was generated to clear the blockage in the Unit 2 reactor building floor drains. Work Order 1083629, "Floor Drain Common Header Plugging," was created to add a hydrolazing tap in the west LPCI corner room but no action was created to clear the blockage by hydrolazing once the hydrolazing tap was installed.

On March 20, 2008, Operations personnel were draining the Unit 2 reactor building closed cooling water (RBCCW) system when the drains by the Unit 2 west HCUs (517 feet elevation) backed up causing the clean area to become contaminated.

On August 12, 2008, Operations personnel were in the process of filling and venting the 2B core spray (CS) system. While performing this activity, it was discovered that the floor drains on the Unit 2 reactor building, 545 feet elevation, backed up. The water from the drains flowed to the hatch and cascaded down to the 517 feet elevation. While non-licensed operators were in the LPCI corner room basement to fill and vent the CS pump and suction header, the floor drain system was unwatched. The failure to properly monitor high point vents and floor drains while filling the 2B CS system (as noted in section E, "Precautions," of DOP 1400-03, "ECCS Fill System," revision 41) caused water to overflow floor drains on the Unit 2 reactor building 545 feet elevation. Blockage in the floor drain header caused floor drains to overflow; this resulted in a significant, unexpected spread of contamination.

On August 18, 2008, WO 1160517, "Operations Venting Core Spray Leads to Contaminated Area," was created to hydrolaze the floor drains in the Unit 2 reactor building. This task was scheduled to be performed on October 13, 2008.

On August 20, 2008, Chemistry was in the process of sampling the 2A and 2B LPCI systems for residual biocide concentration. Sampling of the LPCI system caused the Unit 2 reactor building floor drains on the 517 feet elevation to back-up once again.

All of these events resulted in the unexpected spread of contamination and, as a result of the contamination, the possibility of limiting access to important systems, structures and/or components.

Analysis: The inspectors determined that the spill of water on multiple occasions and the unexpected spread of contamination, was a performance deficiency. Using the guidance contained in IMC 0612, "Power Reactor Inspection Reports." Appendix B, "Issue Disposition Screening," dated September 20, 2007, the inspectors determined that the finding is more than minor because it could reasonably be viewed as a precursor to a significant event. The inspectors determined that the finding warranted evaluation using the SDP.

The inspectors evaluated the finding using IMC 0609, Appendix M, "Significance Determination Process Using Qualitative Criteria," dated December 22, 2006. Per IMC 0609, Appendix M, a bounding quantitative and/or qualitative (i.e. worst case analysis) should be initially performed, using best available information to determine the significance of the issue. If the bounding evaluation shows that the finding is of very low safety significance, the finding is Green. The inspectors assumed losing 1 train of LPCI and 1 train of CS as the worst case scenario. The inspectors performed a Phase 2 Significance Determination assuming no recovery credit and using different initiating event likelihoods. The resultant risk significance of the inspection finding was determined to be of very low safety significance. Also, because there was no actual contamination of personnel and/or damage to systems, structures or components, the finding is determined to be Green. The inspectors determined that this issue also affected the cross-cutting area of Problem Identification and Resolution because the licensee failed to take corrective actions to address an adverse trend in a timely manner. P.1(d)

Enforcement: The failure to clear the blockage in the Unit 2 reactor building floor drains, which caused the spill of water on multiple occasions and the unexpected spread of contamination was not an activity affecting quality subject to 10 CFR Part 50, Appendix B, nor was a procedure required by license conditions or TSs violated. Therefore, while a performance deficiency existed, no violation of regulatory requirements occurred. The inspectors informed the licensee of the concern. The licensee created WO 1160517, "Operations Venting Core Spray Leads to Contaminated Area," to hydrolaze the floor drains in the Unit 2 reactor building. This task was scheduled to be performed during the week of October 20, 2008. The licensee also created WO 972833, "MS D3 Pre Rfl PM Hydrolaze all RB Floor Drains."

This is considered a finding of very low safety significance. **(FIN 05000237/2008004-02)**

.3 Daily Corrective Action Program (CAP) Reviews

a. Scope

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 licensee's CAP. This review was accomplished through inspection of the station's daily condition report packages.

These daily reviews were performed by procedure as part of the inspectors' daily plant status monitoring activities and, as such, did not constitute any separate inspection samples.

b. Findings

No findings of significance were identified.

4OA3 Event Follow-up (71153)

.1 (Closed) LER 237/2008-001-00, "Procedure Adherence Issue Results in Violation of Technical Specification"

On January 15, 2008, a Dresden Nuclear Power Station Qualified Nuclear Engineer identified that the control rod sequence used for the startup of Unit 2 following the refueling outage in November 2007 did not comply with the control rod drop accident analysis. In addition, the licensee identified that the startup performed on November 19, 2007, did not comply with TS 3.1.6, "Rod Pattern Control," for about five and one-half hours, which exceeded the TS Limiting Condition for Operation time period. The enforcement aspects of this finding are discussed in Section 4OA7.

The inspectors reviewed corrective actions in IR 722652 and LER 237/2008-001 and no additional findings of significance were identified.

This represented one inspection sample. This LER is closed.

4OA5 Other Activities

.1 Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

During the inspection period, the inspectors conducted observations of security force personnel and activities to ensure that the activities were consistent with licensee security procedures and regulatory requirements relating to nuclear plant security. These observations took place during both normal and off-normal plant working hours.

These quarterly resident inspector observations of security force personnel and activities did not constitute any additional inspection samples. Rather, they were considered an integral part of the inspectors' normal plant status review and inspection activities.

The inspectors also reviewed a report of the results of a survey of the site security organization relative to its safety conscious work environment. The inspectors considered whether the surveys were conducted in a manner that encouraged candid and honest feedback. The results were reviewed to determine whether adequate number of staff responded to the survey. The inspectors had not yet reviewed Exelon's self-assessment of the survey results because it had not yet been completed.

b. Findings

No findings of significance were identified.

.2 Steam Dryer Removal

a. Inspection Scope

The inspectors reviewed the licensee's preparations for removal of both the Unit 2 and Unit 3 steam dryers from the reactor building to a special mausoleum built on licensee property. The inspectors reviewed crane preventive maintenance and operator qualifications. The inspectors observed practice runs for moving the dryers out of the reactor building and into the mausoleum. The inspectors reviewed security precautions and interviewed site security management. The inspectors observed the dryer movements from remote cameras and performed direct observation from outside the reactor building. The inspectors performed this inspection under IP 71004, "Power Uprate."

b. Findings

No findings of significance were identified.

4OA6 Management Meetings

.1 Exit Meeting Summary

On October 15, 2008, the inspectors presented the inspection results to Mr. D. Wozniak, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors confirmed that none of the potential report input discussed was considered proprietary.

.2 Interim Exit Meetings

Interim exits were conducted for:

Radiological environmental monitoring program inspection with Mr. T. Hanley and other licensee staff on August 8, 2008. The inspectors confirmed that none of the potential report input discussed was considered proprietary.

4OA7 Licensee-Identified Violations

The following violations of very low significance were identified by the licensee and are violations of NRC requirements, which meet the criteria of Section VI of the NRC Enforcement Manual, NUREG-1600, for being dispositioned as NCVs.

.1 LER 237/2008-001-00, "Procedure Adherence Issue Results in Violation of Technical Specification"

Technical Specification 3.1.6.B required that if nine or more operable control rods were not in compliance with the analyzed rod pattern sequence then rod withdrawal was to be suspended and the reactor mode switch was to be placed in shutdown. This requirement only applied to the Unit when it was less than 10 percent reactor power. On January 15, 2008, a Dresden Nuclear Power Station Qualified Nuclear Engineer identified that the control rod sequence used for the startup of Unit 2 following the refueling outage in November 2007 did not comply with the control rod drop accident analysis, and that the startup performed on November 19, 2007, did not comply with TS 3.1.6, "Rod Pattern Control," for about five and one-half hours. Nine or more control rods were not in compliance with the analyzed rod pattern and reactor mode switch was not placed in shutdown. Non-compliance with a TS is a more than minor performance deficiency. Later review by Westinghouse identified that the rod sequence used by the licensee was acceptable for use in the rod drop analysis. Therefore this issue was of very low safety significance (Green). The licensee documented this issue in IR 722652. The inspectors reviewed corrective actions in IR 722652 and LER 237/2008-001 and no additional findings of significance were identified.

.2 IR 779061, "AEER Halon Pilot Hose Not Connected"

On May 23, 2008, the licensee identified that a flexible connector was disconnected on a Halon bottle for the Auxiliary Electrical Equipment Room (AEER) fire suppression system. The licensee concluded that the halon system was last worked on April 24, 2008, under WO 01083261-01, "Perform DFPS 4195-01, 'Halon System Operability,'" and the system connections were not properly tightened. This was a violation of TS 5.4.1. The licensee declared the system inoperable, reconnected the flexible connector thereby restoring operability, and placed the issue into their corrective action system in IR 779061, "AEER Halon Pilot Hose Not Connected." The licensee performed a prompt investigation and a human performance investigation of the incident in addition to reviewing historic operability. The inspectors reviewed the licensee's assessment of the functional impact of the disconnection upon the Halon system. The flexible connector from the solenoid pilot valve to port "B" of the manual-pneumatic actuator was disconnected at the solenoid pilot valve for the #1 pilot bottle for the initial discharge bank of Halon bottles. The disconnection would have prevented actuation of the solenoid pilot valve for the #1 pilot bottle from pressurizing the pilot manifold. (Manual actuation using the pull lever on the bottle would not have been affected.) The Halon system had two pilot bottles for initial discharge bank and the redundant pilot bottle was not affected. Consequently, upon receiving a signal to discharge, the redundant pilot bottle would have pressurized the pilot manifold line resulting in the contents of the all of the Halon bottles within the initial discharge bank being discharged. The licensee evaluated the potential for back leakage through the disconnected flexible connector depressurizing the pilot manifold line. The inspectors concurred with the licensee's assessment that reduction in pressure of the pilot line due to the disconnection would have been minimal and that discharge of the Halon bottles (due to actuation of the redundant pilot cylinder) would not have been prevented. The inspectors noted that the back leakage flow path had a 1/32 inch restriction in comparison to the 3/16 inch flexible connectors used for pressurizing the pilot manifold. In accordance with IMC 0609, "Significance Determination Process,"

Attachment 0609.04, "Phase 1 - Initial Screening and Characterization of Findings," Table 3b the inspectors determined the disconnection degraded the fire protection defense-in-depth strategies. Therefore, screening under IMC 0609, Appendix F, "Fire Protection Significance Determination Process," was required. The inspectors concluded that the disconnection represented a low degradation because, although there would have been a loss of redundancy, the Halon system would have functioned. As such, the issue screened to Green under Task 1.3.1, Step 1, of IMC 0609.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee

D. Wozniak, Site Vice President  
T. Hanley, Plant Manager  
K. Aleshire, Exelon Corporate Emergency Preparedness Manager  
C. Barajas, Operations Director  
H. Bush, Radiation Protection Manager  
S. Taylor, Regulatory Assurance Manager  
D. Galanis, Design Engineering Manager  
D. Glick, Shipping Specialist  
G. Graff, Operations Training Manager  
J. Griffin, Regulatory Assurance - NRC Coordinator  
R. Kalb, Chemistry  
D. Leggett, Nuclear Oversight Manager  
M. Overstreet, Lead Radiation Protection Supervisor  
C. Podczerwinski, Maintenance Rule Coordinator  
P. Quealy, Emergency Preparedness Manager  
E. Rowley, Chemistry  
R. Rybak, Regulatory Assurance  
J. Sipek, Engineering Director  
N. Starcevich, Radiation Protection Instrumentation Coordinator  
J. Strmec, Chemistry Manager  
C. Symonds, Training Director

#### NRC

M. Ring, Chief, Division of Reactor Projects, Branch 1

#### IEMA

R. Schulz, Illinois Emergency Management Agency

## LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

### Opened:

05000237/2008-004-01 05000249/2008-004-01	NCV	Failure to Provide an Adequate Procedure for Several Instrument Maintenance Surveillance Tests
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05000237/2008-004-02	FIN	Repetitive Contaminated Water Spills in the Unit 2 Reactor Building
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### Closed:

05000237/2008-004-01 05000249/2008-004-01	NCV	Failure to Provide an Adequate Procedure for Several Instrument Maintenance Surveillance Tests
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05000237/2008-004-02	FIN	Repetitive Contaminated Water Spills in the Unit 2 Reactor Building
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237/2008-001-00	LER	Procedure Adherence Issue Results in Violation of Technical Specification
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### Discussed:

None.

## LIST OF DOCUMENTS REVIEWED

The following is a partial list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspector reviewed the documents in their entirety, but rather that selected sections or portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection report.

### 1R01 Adverse Weather Protection (71111.01)

- IR 794007, "U2 East Corner Room Water Intrusion"
- WO 951266-01, "Repair Leak on The U2 East LPCI Corner Mezzanine South Wall"

### 1R04 Equipment Alignment (71111.04)

- DOP 1400-M1/E1, "Unit 3 Core Spray System," Revision 18
- DOP 2300-M1/E1, "Unit 3 HPCI System Checklist," Revision 35
- IR 808759, "NRC Identified: DOP 2300-M1/E1 Checklist Error"
- DOP 1400-M1, "Unit 2 Core Spray System," Revision 21
- DOP 1400-E1, "Unit 2 Core Spray Electrical," Revision 03

### 1R05 Fire Protection (71111.05)

- IR 799547, "Unanalyzed Combustible Material Installed in Fire Zone"
- Pre-Fire Plan, U3TB-80
- DRE 97-1015, Fire Load Calculation Sheet
- NES-MS-5.1, Exelon Combustible Loading Standard
- DRE 97-0105, "Determination of Combustible Loading," Revision 8
- IR 779061, "AEER Halon Pilot Hose Not Connected;"
- IR 797106, "NRC Resident Inspector Identified FH#4 House Not Identified"

### 1R06 Flooding (71111.06)

- IR 814420, "Water In-Leakage Into the Unit 2 East Reactor Building Corner Room"

### 1R11 Licensed Operator Regualification Program (71111.11Q)

- Op Exam G-P2, Revision 3, Dated 9/08

### 1R12 Maintenance Effectiveness (71111.12)

- IR 802030, "Material Condition Issues Noted on Walkdown with NRC"
- Calculation DRE02-0033/QDC-1100-N-1259, "Ultimate Suppression Pool pH Following a Loss of Coolant Accident," Revision 0
- CY-AB-120-310, "Suppression Pool/Torus Chemistry," Revision 2
- IR 818271, "NRC Questions pH Sampling of Suppression Pool (Torus)"

### 1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13)

- IR 804635, "3B SBLC Accumulator Schraeder Valve Broken"
- IR 807914, "Failure of DWFDS"
- IR 807998, "Red Phone Call due to RCS Leakage Detection Instrumentation"

### 1R15 Operability Evaluations (71111.15)

- IR 807998, "Red Phone Call due to RCS Leakage Detection Instrumentation"
- T.S. 3.4.4, "RCS Operational Leakage"
- T.S. 3.4.5, "RCS Leakage Detection Instrumentation"
- EC No: 371833, "Unit 3 Drywell Sump System Evaluation," Revision 0
- EC 371835, "Venting and Gas Accumulation Evaluation for Core Spray Discharge Lines," Revision 0
- Ultrasonic Test (UT) Report No. 08-263 (Unit 2)
- UT Report No. 08-268 (Unit 3)

### 1R18 Plant Modifications (71111.18)

- IR 804561, "Opening In The 3B SJAE Wall"
- IR 805935, "Resident Inspector Questions Regarding TB Area DP"
- WO 922363-01, "Revise U2, Fuel Oil Day Tank Level Setpoints Per EC 353371"

### 1R19 Post-Maintenance Testing (71111.19)

- DFPS 4123-01
- MA-AA-733-1001, "Guidance for Check Valve General Visual Inspection," Revision 5
- ER-AA-400-1001, "Check Valve Monitoring and Preventive/Predictive Maintenance Program," Revision 7
- DMP 0040-40, "Valve Packing Installation Procedure," Revision 9
- IR 810584, "NRC Concerns"
- IR 814892, "U2 Isolation Condenser Failed DOS 1300-01"
- IR 815502, "Manual Declutch Problems on 2-1301-3"
- DOS 1300-01, "Isolation Condenser Five Year Heat Removal Capability Test," Revision 32

### 1R22 Surveillance Testing (71111.22)

- DOS 1400-05, "Core Spray System Pump Operability and Quarterly IST Test with Torus Available," Rev 37
- Appendix A, "Unit NSO Daily Surveillance Log," Revision 111
- IR 780436, "U3 Drywell Activity and DWEDS Flow Adverse Trend"
- IR 716422, "U3 Increased Drywell Activity"
- IR 684623, "U3 Drywell Activity Above Appendix A Limits"
- IR-805061, "Test Switch Removal"
- IR 814884, "2A Loop Flow/Recirc Speed vs. Speed Surveillance"
- IR-819996, "Motor Gear Unit not Responding to Flow Controller"

### 2OS1 Access Control to Radiologically Significant Areas (71121.01)

- RWP 10009135; Move First Dryer to Storage; Revision 2

## 2OS2 As-Low-As-Is-Reasonably-Achievable Planning and Controls (71121.02)

- Design Analysis No. DRE06-0005; Storage Building Shielding Requirements for Old Steam Dryers; Revision 000A
- Design Analysis No. DRE06-0003; Dose Rates During Onsite Transport of the Old Steam Dryers; Revision 000A
- ALARA Plan for RWP 10009135 and 10009834; Transfer Unit 2 and 3 Steam Dryers to Permanent Storage Building; Revision 8

## 2PS3 Radiological Environmental Monitoring Program and Radioactive Material Control Program (71122.03)

- Dresden Station Offsite Dose Calculation Manual; Revision 6
- Dresden Nuclear Power Station 2006 and 2007 Annual Radiological Environmental Operating Reports; dated May 15, 2007 and May 15, 2008
- Sampling Procedures Manual; Environmental Incorporated Midwest Laboratory; Revision 12
- CY-AA-170-1000; Radiological Environmental Monitoring Program and Meteorological Program Implementation; Revision 3
- ABB Inc. Flowmeter Calibration Accuracy Certificate; Meter Serial No. 91W513308; dated July 25, 2006 and July 24, 2007
- Field Rotameter Serial No. 95W012433 Flow Verifications for 2006, 2007 and 2008; dated various periods in 2006 – July 2, 2008
- Environmental Air Sample Pump Maintenance Records; Various Sample Pumps and Dates in 2007 – July 11, 2008
- Efficiency Calibration for Gamma Spectroscopy Detectors No. 33, 36 and 834; dated April 25, 2005, January 5, 2005 and July 31, 2008
- LLD Determinations for Gamma Spectroscopy Detectors No. 33, 36 and 834; dated August 6, 2008, January 10, 2005 and July 31, 2008
- Results of Radiochemistry Cross Check Program for Dresden Station; dated September 6, 2007, November 19, 2007, February 13, 2008 and June 9, 2008
- Monthly Reports on the Meteorological Monitoring Program at the Dresden Nuclear Station; Reports for August 2006 – April 2008
- NO-AA-200-002-1001; Exelon Nuclear Audit Handbook; Revision 14
- 2008 – 2009 Exelon Nuclear Master Audit Schedule; Revision 1
- Audit NOSA-DRE-08-04; Chemistry, Radwaste, Effluent and Environmental Monitoring Report; dated April 30, 2008
- 2008 Chemistry, Radwaste, Effluent and Environmental Monitoring Audit Comparative Report; dated June 16, 2008
- Self Assessment No. 720219-03; Radiological Environmental Monitoring Program and RETS/ODCM Radiological Effluent Occurrence Performance Indicator; dated June 4, 2008
- AR 00780755; Meteorological Calibration Documentation Errors; dated May 22, 2008
- RP-AA-500-1001; Requirements for Radioactive Materials Stored Outside; Revision 0
- RP-AA-503; Unconditional Release Survey Method; Revision 1
- TID-2007-002; Unconditional Release Detection Thresholds and Dose Consequences; dated September 20, 2007
- AR 00628508; Nuclear Oversight Finding in Sea Van Controls; dated May 11, 2007
- AR00663195; Housekeeping Needed for Outside RCAs; dated August 22, 2007
- AR 00623426; Quarterly Surveillance for Clean Tools; dated April 30, 2007

#### 4OA1 Performance Indicator Verification (71151)

- DCP-3207-01; Gamma Isotopic Analysis; Revision 24
- CY-DR-110-200; Plant System Sampling; Revision 15
- LS-AA-2090; Monthly Data Elements for NRC Reactor Coolant System Specific Activity; Monthly Data for October 2007 – June 2008
- Dose Equivalent Iodine Calculation Results and Associated Reactor Coolant Filtrate Gamma Isotopic Results; various Periods between October 2007 – June 2008
- NEI 99-02, Revision 5
- Operator Logs 7/1/07 - 6/31/08
- IR 598719, "HPCI Inlet Drain Pot Outlet Piping Down Stream of 3-2301-55 VL" and associated Maintenance Rule Database Document
- IR 654273, "U2 HPCI Inlet Drain Pot Piping Leak" and associated Maintenance Rule Database Document
- WC-AA-101, Exelon Nuclear "On-line work control process," revision 14

#### 4OA2 Identification and Resolution of Problems (71152)

- OP-AA-102-103, Operator Work-Around Program, Rev 2
- WO#10093819, 1<sup>st</sup> qtr OWAB
- IR 800046, "NRC IDs Need To Screen CCSW Restrictions As A Challenge"
- IR 800043, "NRC IDs Need to Screen IR For Challenge"
- IR 806945, "Water on Floor While Filling 2B Core Spray System"
- IR 809033, "LPCI Sampling Causes Floor Drain Back-up"
- IR 806768, "Operations Venting Core Spray Leads to Contaminated Area"
- WO 1160517, "Operations Venting Core Spray Leads to Contaminated Area"
- OP-DR-108-101-1002, "Operations Department Standards and Expectations," Revision 9

#### 4OA5 Other Activities

- IR 802052, "Security – Procedural Violation For Ingress Processing"

## LIST OF ACRONYMS USED

AC	Alternating Current
AEER	Auxiliary Electrical Equipment Room
ALARA	As-Low-As-Is-Reasonably-Achievable
ATWS	Anticipated Transient Without Scram
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CRD	Control Rod Drive
CS	Core Spray
DEI	Dose Equivalent Iodine
DRP	Division of Reactor Projects
ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
HCU	Hydraulic Control Unit
HPCI	High Pressure Coolant Injection
HPPO	Health Physics Position
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
IR	Issue Report
IV	Independent Verification
LER	Licensee Event Report
LLD	Lower Limits of Detection
LPCI	Low Pressure Coolant Injection
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
OSP	Outage Safety Plan
OWA	Operator Workaround
PI	Performance Indicator
PM	Planned or Preventative Maintenance
PMT	Post-Maintenance Testing
RBCCW	Reactor Building Closed Cooling Water
RCA	Radiologically Controlled Area
REMP	Radiological Environmental Monitoring Program
RP	Radiation Protection
RPT	Radiation Protection Technician
RWP	Radiation Work Permit
SBLC	Standby Liquid Control
SDP	Significance Determination Process
SSC	Systems, Structures, and Components
TLD	Thermoluminescent Dosimeters
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
WO	Work Order