UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, IL 60532-4352

May 12, 2008

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

SUBJECT: DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3
INTEGRATED INSPECTION REPORT 05000237/2008002; 05000249/2008002

Dear Mr. Pardee:

On March 31, 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 April 9, 2008, with Mr. T. Hanley and other members of your staff. In addition, three unresolved items described within this report were discussed in a telephone call on May 2, 2008, with Mr. J. Ellis 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, no findings of significance were identified.

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; 72-037
License Nos. DPR-19; DPR-25

Enclosure: Inspection Report 05000237/2008002; 05000249/2008002
w/Attachment: Supplemental Information

DISTRIBUTION:
See next page

Letter to C. Pardee from M. Ring dated May 12, 2008

SUBJECT: DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3
INTEGRATED INSPECTION REPORT 05000237/2008002; 05000249/2008002

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
Manager Licensing - Clinton, Dresden, and Quad Cities
Associate General Counsel
Document Control Desk – Licensing
Assistant Attorney General
State Liaison Officer
Illinois Emergency Management Agency
Chairman, Illinois Commerce Commission

May 12, 2008

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

SUBJECT: DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3
INTEGRATED INSPECTION REPORT 05000237/2008002; 05000249/2008002

Dear Mr. Pardee:

On March 31, 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 April 9, 2008, with Mr. T. Hanley and other members of your staff. In addition, three unresolved items described within this report were discussed in a telephone call on May 2, 2008, with Mr. J. Ellis 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, no findings of significance were identified.

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; 72-037
License Nos. DPR-19; DPR-25

Enclosure: Inspection Report 05000237/2008002; 05000249/2008002
w/Attachment: Supplemental Information

DISTRIBUTION:
See next page

DOCUMENT NAME: G:\DRES\DRES 2008 002.DOC
☐ Publicly Available ☐ Non-Publicly Available ☐ Sensitive ☐ Non-Sensitive

To receive a copy of this document, indicate in the concurrence box "C" = Copy without attach/encl "E" = Copy with attach/encl "N" = No copy

OFFICE	RIII	E	RIII		RIII		RIII	
NAME	MRing:cms							
DATE	5/12/08							

OFFICIAL RECORD COPY

Letter to C. Pardee from M. Ring dated May 12, 2008

SUBJECT: DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3
INTEGRATED INSPECTION REPORT 05000237/2008002; 05000249/2008002

DISTRIBUTION:
TEB
RAG1
CXG1
RidsNrrDirsIrib
MAS
KGO
JKH3
Dresden SRI
CAA1
LSL (electronic IR's only)
C. Pederson, DRP (hard copy - IR's only)
DRPIII
DRSIII
PLB1
TXN
ROPreports@nrc.gov (inspection reports, final SDP letters, any letter with an IR number

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos:	50-237; 50-249; 72-037
License Nos:	DPR-19; DPR-25
Report No:	05000237/2008002; 05000249/2008002
Licensee:	Exelon Generation Company
Facility:	Dresden Nuclear Power Station, Units 2 and 3
Location:	Morris, IL
Dates:	January 1 through March 31, 2008
Inspectors:	C. Phillips, Senior Resident Inspector D. Meléndez-Colon, Resident Inspector J. Tapp, Reactor Engineer W. Slawinski, Senior Health Physicist R. Jickling, Senior Emergency Preparedness Analyst R. Russell, Emergency Preparedness Analyst G. O'Dwyer, Reactor Inspector R. Schulz, Illinois Emergency Management Agency
Approved by:	M. Ring, Chief Branch 1 Division of Reactor Projects

Enclosure

TABLE OF CONTENTS

SUMMARY OF FINDINGS 1

REPORT DETAILS 2

Summary of Plant Status 2

1. REACTOR SAFETY 2
1R01 Adverse Weather Protection (71111.01) 2
1R04 Equipment Alignment (71111.04) 3
1R05 Fire Protection (71111.05) 4
1R07 Heat Sink Performance (71111.07 &71111.07T) 5
1R11 Licensed Operator Requalification Program (71111.11Q) 9
1R12 Maintenance Effectiveness (71111.12) 10
1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13) 11
1R15 Operability Evaluations (71111.15) 12
1R18 Modifications (71111.18) 12
1R19 Post-Maintenance Testing (71111.19) 13
1R20 Outage Activities (71111.20) 14
1R22 Surveillance Testing (71111.22) 14
1EP2 Alert and Notification System Evaluation (71114.02) 15
1EP3 Emergency Response Organization Augmentation Testing (71114.03) ... 16
1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies (71114.05) 16
1EP6 Drill Evaluation (71114.06) 17

2. RADIATION SAFETY 17
2OS3 Radiation Monitoring Instrumentation and Protective Equipment (71121.03) 17

4. OTHER ACTIVITIES 21
4OA1 Performance Indicator Verification (71151) 21
4OA2 Identification and Resolution of Problems (71152) 24
4OA5 Other Activities 26
4OA6 Meetings 26

SUPPLEMENTAL INFORMATION 1

KEY POINTS OF CONTACT 1

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED 1

LIST OF DOCUMENTS REVIEWED 2

LIST OF ACRONYMS USED 7

SUMMARY OF FINDINGS

IR 05000237/2008002, 05000249/2008002; 01/01/2008 – 03/31/2008, Dresden Nuclear Power Station, Units 2 and 3.

This report covers a three-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. The U.S. Nuclear Regulatory Commission'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-Revealing Findings

No violations of significance were identified.

B. Licensee-Identified Violations

No violations of significance were identified.

REPORT DETAILS

Summary of Plant Status

Unit 2

On February 3, 2008, power was reduced to approximately 91 percent electrical output to perform control rod drive testing, and the unit returned to full power on the same day.

On February 25, 2008, power was reduced to approximately 96 percent electrical output to perform control rod drive testing, and the unit returned to full power on the same day.

On March 1, 2008, power was reduced to approximately 67 percent electrical output to perform turbine valve testing, a control rod pattern adjustment, reactor feedwater pump maintenance, and other activities. The unit returned to full power on the same day.

Unit 3

The unit began the month of January slightly derated due to degraded extraction steam pressure to the 3C2 and 3B2 feedwater heaters.

On January 8, 2008, the unit was taken offline to repair/replace several extraction steam bellows and perform low pressure turbine casing repairs. The unit returned to full power on January 21.

On March 8, 2008, power was reduced to approximately 72 percent electrical output to perform turbine valve testing, a control rod pattern adjustment, and various other activities. The unit returned to full power on the same day.

1. REACTOR SAFETY

Cornerstone: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

.1 Readiness For Impending Adverse Weather Condition – Extreme Cold Conditions

a. Inspection Scope

Since extreme cold conditions were forecast in the vicinity of the facility for the week of January 21, 2008, the inspectors reviewed the licensee's overall preparations/protection for the expected weather conditions. On January 22, 2008, the inspectors walked down portions of the Unit 2 and 3 reactor buildings and Unit 2 and 3 turbine buildings because the equipment could be affected or required as a result of the extreme cold conditions forecast for the facility. The inspectors observed insulation, heat trace circuits, space heater operation, and weatherized enclosures to ensure operability of affected systems. The inspectors reviewed licensee procedures and discussed potential compensatory measures with control room personnel. The inspectors focused on plant management's actions for implementing the station's procedures for ensuring adequate personnel for safe plant operation and emergency response would be available.

This inspection constitutes one readiness for impending adverse weather condition sample as defined in Inspection Procedure 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:

- Unit 3A core spray out-of-service, verified Unit 3B core spray alignment;
- Unit 2 125V DC safety related battery after replacement; and
- Unit 3 emergency diesel generator out-of-service, verified Unit 2 and Unit 2/3 emergency diesel generator alignment.

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, Updated Final Safety Analysis Report (UFSAR), Technical Specification (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 corrective action program (CAP) with the appropriate significance characterization. Documents reviewed are listed in the Attachment.

These activities constituted three partial system walkdown samples as defined in Inspection Procedure 71111.04-05.

b. Findings

No findings of significance were identified.

.2 Semi-Annual Complete System Walkdown

a. Inspection Scope

During the week of March 3, 2008, the inspectors performed a complete system alignment inspection of the Unit 2 station blackout diesel to verify the functional capability of the system. This system was selected because it was considered risk-significant in the licensee's probabilistic risk assessment. The inspectors walked down the system to review mechanical and electrical equipment lineups, 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. The documents used for the walkdown and issue review are listed in the Attachment.

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

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

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 9.0.C, "2/3 Swing emergency diesel generator room," elevation 517';
- Fire Zone 7.0.A.1, 7.0.A.2, 7.0.A.3, B.2.7, "Unit 2 turbine building battery rooms," elevation 549';
- Fire Zone 1.1.2.6, "Unit 2 reactor building refuel floor," elevation 613';
- Fire Zone 1.1.1.6, "Unit 3 reactor building refuel floor," elevation 613'; and
- Fire Zone 8.2.4, "Units 2 and 3 cable tunnel," elevation 502'.

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.

These activities constituted five quarterly fire protection inspection samples as defined in Inspection Procedure 71111.05-05.

b. Findings

No findings of significance were identified.

1R07 Annual Heat Sink Performance (71111.07)

a. Inspection Scope

The inspectors reviewed the licensee's testing of Unit 3 emergency diesel generator lube oil heat exchangers to verify that potential deficiencies did not mask the licensee's ability to detect degraded performance, to identify any common cause issues that had the potential to increase risk, and to ensure that the licensee was adequately addressing problems that could result in initiating events that would cause an increase in risk. The inspectors reviewed the licensee's observations as compared against acceptance criteria, the correlation of scheduled testing and the frequency of testing, and the impact of instrument inaccuracies on test results. Inspectors also verified that test acceptance criteria considered differences between test conditions, design conditions, and testing conditions.

This inspection constitutes one sample as defined in Inspection Procedure 71111.07-05.

b. Findings

No findings of significance were identified.

1R07 Triennial Heat Sink Performance (71111.07T)

.1 Triennial Review of Heat Sink Performance

a. Inspection Scope

The inspectors reviewed operability determinations, completed surveillances, vendor manual information, associated calculations, performance test results and cooler inspection results associated with the 3A Low Pressure Coolant Injection (LPCI) heat exchanger and the 3B LPCI room cooler. These heat exchangers/coolers were chosen based on their risk significance in the licensee's probabilistic safety analysis, their important safety-related mitigating system support functions and their relatively low margin.

For the 3A LPCI heat exchanger and the 3B LPCI room cooler, the inspectors verified that testing, inspection, maintenance, and monitoring of biotic fouling and macrofouling

programs were adequate to ensure proper heat transfer. This was accomplished by verifying the test method used was consistent with accepted industry practices, or equivalent, the test conditions were consistent with the selected methodology, the test acceptance criteria were consistent with the design basis values, and results of heat exchanger performance testing were properly evaluated. The inspectors also verified that the test results appropriately considered differences between testing conditions and design conditions, the frequency of testing based on trending of test results was sufficient to detect degradation prior to loss of heat removal capabilities below design basis values, and test results considered test instrument inaccuracies and differences.

For the 3A LPCI heat exchanger and the 3B LPCI room cooler, the inspectors reviewed the methods and results of heat exchanger performance inspections. The inspectors verified the methods used to inspect and clean heat exchangers were consistent with as-found conditions identified and expected degradation trends and industry standards, the licensee's inspection and cleaning activities had established acceptance criteria consistent with industry standards, and the as-found results were recorded, evaluated, and appropriately dispositioned such that the as-left condition was acceptable.

In addition, the inspectors verified the condition and operation of the 3A LPCI heat exchanger and the 3B LPCI room cooler were consistent with design assumptions in heat transfer calculations and as described in the Final Safety Analysis Report (FSAR). This included verification that the number of plugged tubes was within pre-established limits based on capacity and heat transfer assumptions. The inspectors verified the licensee evaluated the potential for water hammer and established adequate controls and operational limits to prevent heat exchanger degradation due to excessive flow induced vibration during operation. In addition, eddy current test reports and visual inspection records were reviewed to determine the structural integrity of the heat exchanger.

The inspectors verified the performance of the following attributes of the ultimate heat sink (UHS) and subcomponents such as piping, intake screens, pumps, valves, etc. by tests or other equivalent methods to ensure availability and accessibility to the cooling water systems in plant.

The inspectors reviewed the results of the licensee's inspection of the UHS weirs or excavations. The inspectors verified that identified settlement or movement indicating loss of structural integrity and/or capacity was appropriately evaluated and dispositioned by the licensee. In addition, the inspectors verified the licensee ensured sufficient reservoir capacity by trending and removing debris or sediment buildup in the UHS.

The inspectors reviewed the licensee's operation of the UHS. The inspectors also verified the licensee's ability to ensure functionality of the UHS during adverse weather conditions. The inspectors verified that the licensee's biocide treatments for biotic control were adequately conducted and the results monitored, trended, and evaluated.

In addition, the inspectors reviewed condition reports related to the heat exchangers or coolers and heat sink performance issues to verify that the licensee had an appropriate threshold for identifying issues and to evaluate the effectiveness of the corrective actions. The documents that were reviewed are included at the end of the report.

These inspection activities constituted two samples.

b. Findings

No findings of significance were identified. Three Unresolved Items were identified.

(1) LPCI Heat Exchangers' Design Calculation Deficiencies and Discrepancies

Introduction: The inspectors identified an unresolved item (URI) regarding the ability of the Unit 2 and Unit 3 LPCI heat exchangers to perform their design safety functions after a design basis loss of coolant accident (Design Basis Accident (DBA)-LOCA).

Description: During a routine thermal performance test on March 21, 2008, the licensee determined that the 3B LPCI heat exchanger had degraded. Specifically, the heat removal capability was determined to be 70.586 MBtu/hr at design conditions which was below the design heat removal rate of 71 MBtu/hr as shown in UFSAR Table 6.2-3b. The licensee determined the heat exchanger was operable but degraded.

On April 14, 2008, while completing actions associated with a concern raised during the NRC Component Design Bases Inspection (05000237/2007006; 05000249/2007006), the licensee discovered that the increased containment pressure expected as a result of extended power uprate (EPU) post-LOCA conditions was not considered in the containment analysis. The increased containment pressure would result in an increased LPCI system pressure which required an increase in the assumed containment cooling service water (CCSW) system pressure to ensure that the CCSW system pressure would always be 20 psid more than the LPCI system. This differential pressure was required to prevent radioactive water from leaking from the LPCI system into the CCSW system and discharging to the Kankakee River. The licensee determined that the required throttling of the CCSW system flow to maintain a higher pressure would reduce the CCSW system flowrate below the 5,000 gpm assumed in DBA-LOCA design calculations. The licensee determined that the CCSW system flowrate could be as low as 3,798 gpm.

The inspectors were also concerned that the associated increase in containment temperature resulting from the increased pressure may not have been considered by the licensee in determining the maximum reactor building room temperatures assumed for the environmental qualification of equipment throughout the reactor building. This potential omission will be considered by the next URI.

The licensee initiated Assignment Report (AR) 763663 and determined the heat exchangers were operable at a maximum river temperature of 85 degrees Fahrenheit. (Current temperature was about 75 degrees Fahrenheit.) This issue is considered unresolved **(URI 05000237/2008002-01 (DRS) URI 05000249/2008002-01 (DRS))** pending the licensee's completion of a past operability determination and inspectors' review of the evaluation.

(2) LPCI Room Cooler Calculation Deficiencies and Discrepancies

Introduction: The inspectors identified an unresolved item regarding the calculation of the post-LOCA, post-EPU temperatures in the LPCI Room after a DBA-LOCA without LPCI room cooling.

Description: The inspectors requested documentation with respect to LPCI room heat-up calculations. The inspectors noted that UFSAR (revision 7, dated June 2007) section 3.11.4, "Loss of Ventilation," stated, "The LPCI/CS (core spray) room coolers are not required to support the operation of the LPCI/CS systems. All safety-related electrical equipment located in the LPCI/CS rooms that is subject to 10 CFR 50.49 has been environmentally qualified for the elevated temperatures resulting from a LOCA concurrent with a loss of the room coolers (LORC)." The inspectors were provided Calculation DRE 00-0075, "Evaluation of Dresden binders for EPU environmental conditions," Revision 2, dated December 18, 2005, to support the determination that the room coolers were not needed and therefore, were not safety-related. The calculation concluded that safety-related equipment throughout the reactor building was adequately environmentally qualified for post-EPU post-LOCA conditions without the LPCI room coolers and the associated fans. The inspectors had the following concerns:

- As discussed in the previous URI, the inspectors were concerned that the associated increase in containment temperature resulting from the increased containment pressure post-EPU may also not have been considered by the licensee in determining the post-EPU maximum reactor building room temperatures post-LOCA. Failure to do so may have underestimated the maximum reactor building (including the LPCI room) temperatures post-LOCA and the impact on the environmental qualification of equipment throughout the reactor building. The licensee initiated AR 763663 to address the increased containment pressure post-EPU.

- The inspectors noted that Calculation DRE 00-0075, "Evaluation of Dresden Environmentally Qualified (EQ) binders for EPU environmental conditions," Rev 2, dated 12-18-05, stated that safety-related equipment throughout the reactor building was adequately environmentally qualified for post-EPU post-LOCA conditions without the LPCI/CS room coolers. However, Calculation DRE 01-0041, Revision 0, dated February 21, 2007 changed the LPCI rooms' post-DBA conditions. Specifically, the post-LOCA LPCI room temperature changed from 168 to 190 degrees Fahrenheit. In addition, this revision changed the reactor building post-DBA conditions and the relevant EQ binders had not been updated.

- Calculation DRE 00-0075 assumed by engineering judgment that for zone 4 & 5 (LPCI corner rooms), the post LOCA area temperatures would be 22 degrees Fahrenheit higher based on the difference in suppression pool temperature profiles between pre-EPU and post-EPU post-LOCA conditions as shown in the Reference 5.1.2. The inspectors noted that Reference 5.1.2 did not indicate where the torus temperature profiles were calculated but rather referred back to DRE 00-0075 as the source. The licensee initiated an Issue Report (IR) indicating that calculation BSA-D-97-02, revision 1, "Calculation of Long Term Suppression Pool Temperature Response for Dresden Station," was the source of the pre-EPU post-LOCA torus temperature profile and that DRE 00-0075 was a historical calculation and would not be updated.

- The inspectors noted that Calculation DRE 01-0041, revision 2 stated in Section 6.4 that the turbine building ventilation system was assumed to run after a design basis LOCA. Likewise, Assumption 3 in RSA-D-92-07, "LPCI Room Temperature response due to Loss of Room Cooler at Dresden Station," stated that the turbine building remained at 104 degrees Fahrenheit throughout the post-LOCA period which also indicated the turbine building ventilation system was assumed to be

operating during and after the DBA-LOCA. The inspectors questioned whether turbine building ventilation system would be running since it was not safety-related and would not be powered by the emergency diesel generators.

- The inspectors questioned the assumed heat load from one core spray and one LCPI pump. In Calculation BSA-D-00-01, "DRES ECCS room temperature response with Loss of LPCI Room Cooling," Revision 0, dated February 9, 2000, Design Input 1 indicated that the heat load in the LPCI room 10 minutes after a LOCA was assumed to be 302,050 BTU/hr. This is equal to about 84 Btu/sec or 118 horsepower (HP). However, the inspector estimated that the heat load due to the two pumps would be at least 130 HP. In addition, the calculation did not consider the increased heat due to the increased current in the motor due to the reduced voltage in the induction motor due to the increased room temperature (190 vs 168 degree Fahrenheit). In addition, the previous EQ qualification calculation did not consider the increased heat due to the increased current in the motor due to the reduced voltage in the induction motor due to due to the assumption of an increased room temperature due to assumption that LPCI room coolers were not needed (168 vs 104 degree Fahrenheit).

The licensee stated that a new calculation would be completed to address the predicted post-EPU and post-DBA-LOCA temperatures in the reactor building. This issue is considered unresolved **(URI 05000237/2008002-02 (DRS) URI 05000249/2008002-02)** pending review of the final calculation.

(3) LPCI Room Equipment EQ Qualification Deficiencies and Discrepancies

Introduction: The inspectors identified an unresolved item regarding the ability of the LPCI room safety-related equipment to perform its post-LOCA design safety function without LPCI room cooling.

Description: The inspectors noted that Dresden EQ binders concluded that safety-related equipment throughout the reactor building was adequately environmentally qualified for post-EPU post-LOCA conditions without the LPCI room coolers and the associated fans. The inspectors noted that the motor used in the EQ test was not identical to the motors installed at Dresden. The inspectors questioned whether the motor used in testing was acceptable. These issues are considered unresolved **(URI 05000237/2008002-03 (DRS) URI 05000249/2008002-03 (DRS))** pending the inspectors' review of the licensing basis.

1R11 Licensed Operator Requalification Program (71111.11Q)

a. Inspection Scope

On January 28, 2008, and again on February 4, 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 two quarterly licensed operator requalification program samples as defined in Inspection Procedure 71111.11.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

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

- Unit 3 emergency diesel generator; and
- Unit 3 high pressure coolant injection system.

The inspectors reviewed events such as where ineffective equipment maintenance has 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 Inspection Procedure 71111.12-05.

b. Findings

No findings of significance were identified.

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

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:

- Work Order 802846-01, “3A Core spray pump motor surveillance;”
- Work Order 99053253, ”Dresden 2 - 17 year replace 125V DC station main battery 2-83125;”
- Work Order 431632, “Dresden 2 - 6 year preventative maintenance 250V DC breaker isolation condenser supply line isolation valve 1301-3;”
- Work Order 1094260-01, “Dresden 3 - 1 month TS Unit Diesel Generator Operability;” and
- Work Order 1065405-01, “2/3 EDG [emergency diesel generator] Cooling Water Flow Reversal with U3 HPCI [high pressure coolant injection] Unavailable.”

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 five samples as defined in Inspection Procedure 71111.13-05.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed the following issues:

- Issue Report 719750, "Yoke Found Broke During Walkdown/Stem Also Bent;"
- Issue Report 688977, "Error in Reduced FW [feedwater] Temperature Region With Westinghouse Fuel;"
- Operability Evaluation 08-001, "Unit 3 EDG Pre-Lubrication System;"
- Issue Report 728225, "Higher Than Expected Amount of Air When Venting LPCI [low pressure coolant injection] Cross Tie;" and
- Issue Report 732758, "Failure of Unit 3 B SBLC [standby liquid control} Accumulator Charging Valve."

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 five samples as defined in Inspection Procedure 71111.15-05.

b. Findings

No findings of significance were identified.

1R18 Modifications (71111.18)

.1 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed the following temporary modification:

- Engineering Change 368695, "Install Test Equipment to Monitor 2A Reactor Feed Pump," Revision 1 and Engineering Change 368860, "Install Test Equipment to Monitor 3A and 3B Reactor Feed Pumps," Revision 0.

The inspectors compared the temporary configuration change and associated 10 CFR 50.59 screening and evaluation information against the design basis, the

UFSAR and the TS, as applicable, to verify that the modification did not affect the operability or availability of the affected system. The inspectors, as applicable, performed field verifications to ensure that the modifications were installed as directed; the modifications operated as expected; modification testing adequately demonstrated continued system operability, availability, and reliability; and that operation of the modifications did not impact the operability of any interfacing systems. Lastly, the inspectors discussed the temporary modification with operations, engineering, and training personnel to ensure that the individuals were aware of how extended operation with the temporary modification in place could impact overall plant performance.

This inspection constitutes one temporary modification sample as defined in Inspection Procedure 71111.18-05.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

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

- Work order 882328-01, “Two Year 3A Core Spray Pump Motor Environmental Qualification Surveillance;”
- Work order 99053253: “Dresden 2 - 17 year PM [preventative maintenance] Replace 125V STA Main Battery 2-83125;”
- Work order 867233-06, “IM [instrument maintenance] Post Installation Test Relay 2-1530-105;”
- Work order 977159, Tasks 06 and 07, “Install MCC [motor control center] Replacement Buckets per EC [engineering change] 363270;”
- Work order 1094260-01, “Dresden 3 - 1M [month] TS Unit Diesel Generator Operability;”
- Work order 1028190, “U2/3 RBCCW [reactor building closed cooling water] PP [pump] Dead-Headed in Parallel with 3B RBCCW PP;” and
- Work order 911669, “D2/3 2Y [year] Standby Diesel Generator Inspection.”

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.

This inspection constitutes seven samples as defined in Inspection Procedure 71111.19.

b. Findings

No findings of significance were identified.

1R20 Outage Activities (71111.20)

a. Inspection Scope

The inspectors evaluated outage activities for a maintenance outage (D3M14) that began on January 8, 2008, and continued through January 21, 2008, when Unit 3 achieved full power. The inspectors reviewed activities to ensure that the licensee considered risk in developing, planning, and implementing the outage schedule.

The inspectors observed or reviewed portions of the reactor shutdown and cooldown, outage equipment configuration and risk management, electrical lineups, selected clearances, control and monitoring of decay heat removal, control of containment activities, startup and heatup activities, and identification and resolution of problems associated with the outage. The outage had been planned because of changes in feedwater heater pressures indicating the beginning of an extraction steam line failure in the condenser. About 20 minutes before the start of the maintenance outage downpower, feedwater heater pressures changed dramatically. This occurred because one of the two 24 inch diameter extraction steam line bellows failed inside the “B” condenser bay.

This inspection constitutes one other outage sample as defined in Inspection Procedure 71111.20-05.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

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:

- Unit 3, DOS 0250-02, “Full Closure Timing and Exercising of Main Steam Isolation Valves,” Revision 25;
- DOP 2000-24, “Drywell Sump Operation,” Revision 16;

- DOS 6600-06, “Bus Undervoltage and ECCS [emergency core cooling system] Integrated Functional Test For Unit 2/3 Diesel Generator To Unit 2;”
- DIS 7500-01, “Unit 2/3 SBGT [standby gas treatment] Auto-Actuation and Secondary Containment Isolation System Logic System Functional Test,” Revision 24; and
- Work order 01100465-01, “U3 EDG Lube Oil Gallery (Lower Bulls Eye) Site Glass Empty.”

The inspectors observed in plant activities and reviewed procedures and associated records to determine whether: preconditioning occurred; effects of the testing were adequately addressed by control room personnel or engineers prior to the commencement of the testing; acceptance criteria were clearly stated, demonstrated operational readiness, and were 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 UFSAR, 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, 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.

This inspection constitutes three routine surveillance testing samples, one inservice inspection sample, and one containment isolation valve inspection sample as defined in Inspection Procedure 71111.22-05, for a total of five samples.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP2 Alert and Notification System (ANS) Evaluation (71114.02)

a. Inspection Scope

The inspectors discussed with Emergency Preparedness (EP) staff the operation, maintenance, and periodic testing of the ANS in the Dresden Station’s plume pathway Emergency Planning Zone to determine whether the ANS equipment was adequately

maintained and tested in accordance with Emergency Plan commitments and procedures. The inspectors reviewed records of January 2006 through December 2007 monthly trend reports and siren test failures, as well as 2006 and 2007 maintenance documents.

These activities completed one inspection sample as defined in Inspection Procedure 71114.02-05.

b. Findings

No findings of significance were identified.

1EP3 Emergency Response Organization (ERO) Augmentation Testing (71114.03)

a. Inspection Scope

The inspectors reviewed and discussed with plant EP staff the emergency plan commitments and procedures that addressed the primary and alternate methods of initiating an ERO activation to augment the on-shift ERO as well as the provisions for maintaining the station's ERO call-out roster. The inspectors also reviewed reports and a sample of CAP records of unannounced off-hour augmentation tests, which were conducted January 2006 through December 2007, to determine the adequacy of the drills' critiques and associated corrective actions. The inspectors also reviewed the EP training records of a sample of approximately 74 Dresden Station ERO personnel, who were assigned to key and support positions, to determine whether they were currently trained for their assigned ERO positions.

These activities completed one inspection sample as defined in Inspection Procedure 71114.03-05.

b. Findings

No findings of significance were identified.

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies (71114.05)

a. Inspection Scope

The inspectors reviewed a sample of Nuclear Oversight staff's 2006 and 2007 audits of the Dresden Station emergency preparedness program to verify that these independent assessments met the requirements of 10 CFR 50.54(t). The inspectors also reviewed critique reports and samples of CAP records associated with the 2007 biennial exercise, as well as various EP drills conducted in 2006 and 2007 in order to verify that the licensee fulfilled its drill commitments and to evaluate the licensee's efforts to identify, track, and resolve concerns identified during these activities. Additionally, the inspectors reviewed and discussed with station EP staff the CAP, a sample of EP items, and corrective actions related to the facility's EP program and activities to determine whether corrective actions were acceptably completed.

These activities completed one inspection sample as defined in Inspection Procedure 71114.05-05.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

.1 Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency drill on February 4, 2008, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the simulator to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures. The inspectors also attended the licensee drill critique to compare any inspector-observed weakness with those identified by the licensee staff in order to evaluate the critique 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 package and other documents listed in the Attachment.

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

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS3 Radiation Monitoring Instrumentation and Protective Equipment (71121.03)

.1 Inspection Planning and Identification of Instrumentation

a. Inspection Scope

The inspectors reviewed the plant FSAR to identify applicable radiation monitors associated with measuring transient high and very high radiation areas, including those intended for remote emergency assessment. The inspectors identified the types of portable radiation detection instrumentation used for job coverage of high radiation area work, including instruments used for underwater surveys, portable and fixed area radiation monitors used to provide radiological information in various plant areas, and continuous air monitors used to assess airborne radiological conditions and consequently work areas with the potential for workers to receive a 50 millirem or greater committed effective dose equivalent (CEDE). Whole body counters used to monitor for internal exposure and those radiation detection instruments utilized to conduct surveys for the release of personnel and equipment from the radiologically controlled area (RCA), including contamination monitors and portal monitors, were also identified.

These reviews constitute two samples as defined in Inspection Procedure 71121.03.

b. Findings

No findings of significance were identified.

.2 Calibration and Testing of Radiation Monitoring Instrumentation

a. Inspection Scope

The inspectors reviewed radiological instrumentation to determine if it had been calibrated as required by the licensee's procedures, consistent with industry and regulatory standards. The inspectors also reviewed alarm setpoints for selected instruments to determine whether they were established consistent with the FSAR or TSs, as applicable, and were consistent with industry practices and regulatory guidance. Specifically, the inspectors reviewed calibration procedures and the most recent calibration records for the following radiation monitoring instrumentation and calibration equipment:

- Unit 2 and Unit 3 Drywell High Range (Accident) Radiation Monitors;
- Unit 2 and Unit 3 Reactor Building Exhaust Radiation Monitors;
- Common Unit Refuel Floor Continuous Air Monitor (CAM) and Unit 2 and 3 Drywell CAMs;
- Portal monitors used at RCA and protected area egresses;
- Personnel contamination monitors used at RCA egress;
- Instrument Calibrator (and the associated instruments used to measure calibrator output);
- Unit 2 Reactor Water Cleanup, High Pressure Coolant Injection and Air Ejector Area Radiation Monitors (ARMs);
- Unit 3 Control Rod Drive Module and Radwaste Pump Room ARMs;
- Several portable survey instruments; and
- Whole Body Counter.

The inspectors determined what actions were taken when, during calibration or source checks, an instrument was found significantly out of calibration or exceeded as-found acceptance criteria. Should that occur, the inspectors determined whether the licensee's actions would include a determination of the instruments previous usages and the possible consequences of that use since the prior successful calibration. The inspectors also reviewed the results of the licensee's most recent 10 CFR Part 61 source term (radionuclide mix) evaluation to determine if radiation sources used for instrument calibration and for instrument checks were representative of the plant source term.

Also, the inspectors observed the licensee's use of the portable survey instrument calibration units, discussed calibrator output validation methods, and compared calibrator exposed readings with calculated/expected values. The inspectors evaluated compliance with licensee procedures while radiation protection (RP) personnel demonstrated the methods for performing source checks of portable survey instruments and source checks of personnel contamination and portal monitors.

These reviews constitute one sample as defined in Inspection Procedure 71121.03.

b. Findings

No findings of significance were identified.

.3 Problem Identification and Resolution

a. Inspection Scope

The inspectors reviewed licensee CAP documents and any Licensee Event Reports or special reports that involved personnel contamination monitor alarms due to personnel internal exposures to determine whether identified problems were entered into the CAP for resolution.

While no internal exposure with a CEDE greater than 50 millirem occurred since the last inspection in this area, the inspectors reviewed the licensee's methodology for internal dose assessment to determine if affected personnel would be properly monitored using calibrated equipment and if the data would be analyzed and exposures properly assessed.

These reviews constitute one sample as defined in Inspection Procedure 71121.03.

The inspectors reviewed CAP reports related to exposure significant radiological incidents that involved radiation monitoring instrument deficiencies since the last inspection in this area, as applicable. Members of the radiation protection staff were interviewed and corrective action documents were reviewed to determine whether follow-up activities were being conducted in an effective and timely manner commensurate with their importance to safety and risk based on the following:

- 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;
- Resolution of Non-Cited Violations (NCVs) tracked in the corrective action system; and
- Identification and implementation of effective corrective actions.

These reviews constitute one sample and defined in Inspection Procedure 71121.03.

The inspectors determined if the licensee's self-assessment and audit activities completed for the approximate 2-year period that preceded the inspection were identifying and addressing repetitive deficiencies or significant individual deficiencies in problem identification and resolution, as applicable.

These reviews constitute one sample as defined by Inspection Procedure 71121.03.

b. Findings

No findings of significance were identified.

.4 Radiation Protection Technician Instrument Use

a. Inspection Scope

The inspectors determined whether calibrations for those survey instruments used to perform job coverage surveys and for those currently designated for use had not lapsed. The inspectors determined if response checks of portable survey instruments and checks of instruments used for unconditional release of materials and workers from the RCA were completed prior to instrument use, as required by the licensee's procedure. The inspectors also discussed instrument calibration methods and source response check practices with radiation protection staff and observed staff demonstrate instrument source checks.

These reviews constitute one sample as defined in Inspection Procedure 71121.03.

b. Findings

No findings of significance were identified.

.5 Self-Contained Breathing Apparatus (SCBA) Maintenance/Inspection and Emergency Response Staff Qualifications

a. Inspection Scope

The inspectors reviewed the status and surveillance records of SCBAs staged in the plant and ready for use, and evaluated the licensee's capabilities for refilling and transporting SCBA air bottles to and from the control room and operation support center during emergency conditions. The inspectors determined if control room staff and other emergency response and radiation protection personnel were trained, respirator fit tested, and medically certified to use SCBAs, including personal bottle change-out. Additionally, the inspectors reviewed SCBA qualification records for numerous members of the licensee's radiological emergency teams to determine if a sufficient number of staff were qualified to fulfill emergency response positions, consistent with the licensee's emergency plan and the requirements of 10 CFR 50.47.

These reviews constitute one sample as defined in Inspection Procedure 71121.03.

The inspectors reviewed the qualification documentation for at least 50 percent of the onsite, or as applicable, offsite contractor personnel that perform maintenance on manufacturer designated vital SCBA components. The inspectors also reviewed vital component maintenance records for several SCBA units that were designated as ready-for-use. The inspectors also evaluated through record review and observations if the required air cylinder hydrostatic testing was documented and current and if the Department of Transportation required retest air cylinder markings were in place for several randomly selected SCBA units and spare air bottles. The inspectors reviewed the onsite maintenance procedures governing vital component work, as applicable, including those for the low-pressure alarm and pressure-demand air regulator. The inspectors reviewed the licensee's maintenance procedures and the SCBA manufacturer's recommended practices to determine if there were inconsistencies between them.

These reviews constitute one sample as defined in Inspection Procedure 71121.03.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES (OA)

4OA1 Performance Indicator (PI) Verification (71151)

.1 Data Submission Issue

a. Inspection Scope

The inspectors performed a review of the data submitted by the licensee for the First Quarter 2008 performance indicators for any obvious inconsistencies prior to its public release in accordance with IMC 0608, "Performance Indicator Program."

This review was performed as part of the inspectors' normal plant status activities and, as such, did not constitute a separate inspection sample.

b. Findings

No findings of significance were identified.

.2 Unplanned Scrams per 7000 Critical Hours

a. Inspection Scope

The inspectors sampled licensee submittals for the Unplanned Scrams per 7000 Critical Hours PI for Units 2 and 3 for the period from the First Quarter 2007 through the Fourth Quarter 2007 to determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in Revision 5 of the Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline," were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports and NRC Inspection reports for the period of January 2007 through January 2008 to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the Attachment to this report.

This inspection constitutes two unplanned scrams per 7000 critical hours samples as defined in Inspection Procedure 71151.

b. Findings

No findings of significance were identified.

.3 Unplanned Scrams with Complications

a. Inspection Scope

The inspectors sampled licensee submittals for the Unplanned Scrams with Complications performance indicator for Unit 2 and 3 for the period from the First Quarter 2007 through the Fourth Quarter 2007 to determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in Revision 5 of the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports and NRC Integrated Inspection reports for the period of January 2007 through January 2008 to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the Attachment to this report.

This inspection constitutes two unplanned scrams with complications samples as defined in Inspection Procedure 71151.

b. Findings

No findings of significance were identified.

.4 Unplanned Transients per 7000 Critical Hours

a. Inspection Scope

The inspectors sampled licensee submittals for the Unplanned Transients per 7000 Critical Hours PI for Units 2 and 3, for the period from the First Quarter 2007 through the Fourth Quarter 2007 to determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in Revision 5 of the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, maintenance rule records, event reports and NRC Integrated Inspection reports for the period of January 2007 through January 2008 to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the Attachment to this report.

This inspection constitutes two unplanned transients per 7000 critical hours samples as defined in Inspection Procedure 71151.

b. Findings

No findings of significance were identified.

Cornerstone: Public Radiation Safety

.5 Radiation 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:

- Radiological Effluent Technical Specification/Offsite Dose Calculation Manual (RETS/ODCM) Radiological Effluent Occurrence.

The inspectors reviewed data associated with the RETS/ODCM PI to determine if the indicator was accurately assessed and reported. The inspectors reviewed the licensee's assignment report (AR) database and individual ARs generated in 2007 to identify any potential occurrences such as unmonitored, uncontrolled or improperly calculated effluent releases that may have impacted offsite dose. The inspectors also reviewed gaseous and liquid effluent summary data and the results of associated offsite dose calculations for selected periods in 2007 to determine if indicator results were accurately reported. The inspectors also discussed with the licensee the methods for quantifying gaseous and liquid effluents and for determining effluent dose.

These reviews constitute one sample as defined in Inspection Procedure 71151.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

.6 Emergency Preparedness Strategic Areas

a. Inspection Scope

The inspectors reviewed the licensee's records associated with the three EP performance indicators (PIs) listed below. The inspectors verified that the licensee accurately reported these indicators in accordance with relevant procedures and NEI guidance endorsed by the NRC. Specifically, the inspectors reviewed licensee records associated with PI data reported to the NRC for the period January 2007 through September 2007. Reviewed records and processes discussed included: procedural guidance on assessing opportunities for the three PIs; assessments of PI opportunities during predesignated control room simulator training sessions, the 2007 biennial exercise, and other drills; revisions of the roster of personnel assigned to key Emergency Response Organization (ERO) positions; and results of periodic Alert and Notification System operability tests. The following PIs were reviewed:

Common

- Alert and Notification System;
- ERO Drill Participation; and
- Drill and Exercise Performance.

These reviews constitute three samples as defined in Inspection Procedure 71151.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

.1 Routine Review of items Entered Into the CAP Scope

As part of the various baseline inspection procedures discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that they were being entered into the licensee's CAP at an appropriate threshold, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed. Attributes reviewed included: the complete and accurate identification of the problem; that timeliness was commensurate with the safety significance; that evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent of condition reviews, and previous occurrence reviews were proper and adequate; and that the classification, prioritization, focus, and timeliness of corrective actions were commensurate with safety and sufficient to prevent recurrence of the issue. Minor issues entered into the licensee's CAP as a result of the inspectors' observations are included in the attached List of Documents Reviewed.

These routine reviews for the identification and resolution of problems did not constitute any additional inspection samples. Instead, by procedure they were considered an integral part of the inspections performed during the quarter and documented in Section 1 of this report.

a. Findings

No findings of significance were identified.

.2 Daily Corrective Action Program 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.

.3 In-depth Review

Identification and Corrective Actions associated with IR 720709, "Revision to M&TE [maintenance and test equipment] Calculation DRE98-0047 Extended Multiple Times."

a. Effectiveness of Problem Identification

(1) Inspection Scope

The inspectors reviewed IR 720709, "Revision to M&TE Calculation DRE98-0047 Extended Multiple Times," regarding corrective actions associated with IR 372385, "Calculation Number DRE98-0047 Requires Revision."

(2) Issues

None.

b. Prioritization and Evaluation of Issues

(1) Inspection Scope

The inspectors reviewed IR 720709, "Revision to M&TE Calculation DRE98-0047 Extended Multiple Times," regarding corrective actions associated with IR 372385, "Calculation Number DRE98-0047 Requires Revision." The inspectors also reviewed MA-AA-716-040, "Control of Portable Measurement and Test Equipment Program," EC 351583, "Evaluate Yokogawa FG110/FG300 Function Generators For Use As M&TE," The inspectors interviewed design engineering personnel and instrument maintenance personnel.

(2) Issues

None. The licensee has been slow to update the calculation. However, the calculation appears to be a tool only. The evaluations required by the stations M&TE program document were all correct and in place.

c. Effectiveness of Corrective Actions

(1) Inspection Scope

The inspectors reviewed IR 720709, "Revision to M&TE Calculation DRE98-0047 Extended Multiple Times," regarding corrective actions associated with IR 372385, "Calculation Number DRE98-0047 Requires Revision. The inspectors also reviewed MA-AA-716-040, "Control of Portable Measurement and Test Equipment Program," Engineering Change (EC) 351583, "Evaluate Yokogawa FG110/FG300 Function Generators For Use As M&TE," The inspectors interviewed design engineering personnel and instrument maintenance personnel.

(2) Issues

None.

This represented one inspection sample as an in-depth review as defined in Inspection Procedure 71152.

d. Findings

No findings of significance were identified.

4OA5 Other Activities

.1 Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

During the inspection period, the inspectors conducted the following 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.

- Multiple tours of operations within the Central and Secondary Security Alarm Stations;
- Tours of selected security towers/security officer response posts;
- Security force shift turnover activities; and
- Observed a security force drill.

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.

b. Findings

No findings of significance were identified.

4OA6 Meetings

.1 Exit Meeting Summary

On April 9, 2008, the inspectors presented the inspection results to Mr. T. Hanley, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified. An additional telephone discussion between Ms. A. M. Stone and Mr. J. Ellis was conducted on May 2, 2008, to describe and clarify the three unresolved items discussed in Section 1R07, Triennial Heat Sink Performance.

.2 Interim Exit Meetings

Interim exits were conducted for:

- Occupational radiation safety cornerstone radiation monitoring instrumentation and protective equipment with Mr. D. Wozniak and other licensee staff on January 18, 2008.

- Emergency Preparedness inspection with Mr. D. Wozniak on January 18, 2008.

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
J. Ellis, Regulatory Assurance Manager
D. Galanis, Design Engineering Manager
D. Glick, Shipping Specialist
G. Graff, Operations Training Manager
J. Griffin, Regulatory Assurance - NRC Coordinator
D. Leggett, Nuclear Oversight Manager
M. Overstreet, Lead RP 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:

05000237/2008002-01; 05000249/2008002-01	URI	LPCI Heat Exchangers' Design Calculation Deficiencies and Discrepancies
05000237/2008002-02; 05000249/2008002-02	URI	LPCI Room Cooler Calculation Deficiencies and Discrepancies
05000237/2008002-03; 05000249/2008002-03	URI	LPCI Room Equipment EQ Qualification Deficiencies and Discrepancies

Closed:

None

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.

1R04 Equipment Alignment

- DOP 1400-M1/E1, "UNIT 3 CORE SPRAY SYSTEM," Revision 18

1R04 Equipment Alignment (System)

- DOP 6620-16, "SBO [Station Blackout 2(3) Preparation For Standby Readiness," Revision 7
- DOP 6620-M1, "Unit 2 Station Blackout Mechanical Checklist," Revision 7
- IR 745251, "SBO DG VETIP [Vendor Manual] Information Incorrect"
- IR 692006, "2-6620-120B, 2B SBO Eng Jacket Water Expansion Tank Low"
- Letter, From Engine Systems, Inc., Senior Engineer J. Abernathy, to D. Blackwell SBO System Manager, dated March 4, 2008. Subject: SBO Jacket Water Expansion Tank

1R05 Fire Protection

- Dresden Fire Protection Report, Section 4.7.1, "2/3 Diesel Generator (Fire Zone 9.0.C)
- IR 690623, "Potentially Inop Fire Door During EDG Run"
- IR 741887, "NRC Housekeeping Issues"
- IR 739758, "NRC Resident Inspector Id'd Discrepancy"
- EC 368492, "Evaluation to Determine Potential Immediately Dangerous to Life and Health Conditions in Vital Areas"

1R07 Heat Sink Performance

- EC# 366914, 2006 3A LPCI HX thermal performance test, September 21, 2007
- SA-1429, Heat Exchangers Credited in the Dresden 2005A PRA Model, Rev. 0
- DRE 98-0117, LPCI Heat Exchanger K Factor, Rev 0A
- GE-NE-A22-00103-55-01), Appendix C, section 3.3, UFSAR changes – LPCI Rooms, Revision 1
- DRE 00-0075, Evaluation of Dresden EQ Binders for EPU environmental condition, Revision 2
- IR 556633, 3B LPCI HX tube side excessive fouling by raw water debris, November 7, 2006
- IR 733391, FASA –Issues with Procedure DTS 3900-07, February 7, 2008
- IR 733421, FASA – Discrepancy between ECT Data Report & as-found inspection, February 7, 2008
- IR 741858, 2A LPCI Room Cooler ECT found significant tube degradation, February 27, 2008
- AR 742158, NRC identified calculation design information not supported, February 27, 2008
- AR 742760, NRC identified calculation assumption not technically supported, February 29, 2008
- AR 745279, NRC identified NFM calculation cannot be retrieved from records management, February 27, 2008
- Assignment 714091, FASA for 2008 NRC Triennial Heat Sink Inspection, February 8, 2008
- VETIP - Binder # D1182, Perfex Containment Cooling Heat Exhanger (LPCI)"

- EA Project 6157811, Letter Report of Bathymetric Survery of the Canal System at Exelon's Dresden Nuclear Station, December 17, 2007
- ATI 089443-22, Water Hammer Evaluation, Revision 5
- 6B-3222, Containment Exchanger, Revision 3
- DCP 1008-04, Heat Exchanger Inspection Program, Revision 6
- ER-AA-340-1002, SW Heat Exchanger & Component Inspection Guide, Revision 3
- DOP 4400-07, Circulating Water Deicing Operation, Revision 12
- DCP 2103-06, Cooling and Service Water chemical injection system, Revision 29
- WO 748927-01 & 02, Inspected and Cleaned 2A LPCI Room Cooler, February 28, 2006
- WO 553711-01, Inspected and Cleaned 2A LPCI Room Cooler, July 29, 2004

1R11 Operator Requalification

- Opex K, "Loss of MCC 28-1, Small Leak, ATWS/LOCA," Revision 8

1R15 Operability Evaluations

- DOA 3500-02, "Loss of Feedwater Heating," Revision 30
- IR 736715, "NRC Questions Need For Extent of Condition Review"
- IR 727307, "U3 EDG Lube Oil Gallery (Lower Bulls Eye) Site Glass Empty"
- DOA 6600-03, "Diesel Generator Keep Warm System Failure," Revision 07
- EC 369341, "Unit 3 LPCI [low pressure core injection] System Venting"
- DOP 1100-01, "Standby Operation of Standby Liquid Control System," Revision 20
- IR 748112, "Unit 3B SBLC System Historical Operability Review"
- WO 1079287, "D3 QTR PM Charge SBLC Accumulators"
- WO 1103599, "Failure of U3B SBLC Accumulator Charging Valve"

1R19 Post-Maintenance Testing

- IR 755335, "EDG Alarm Tiles Not Per Print"
- IR 755744, "2/3 EDG Cooling Water System Leak Found"
- IR 754133, "2/3-6699-112 Valve Position/Stop Missing"

1R22 Surveillance Testing

- Appendix A, "Unit NSO Daily Surveillance Log," Revision 109
- IR 724707, "Increased U3 Drywell Leakage after D3M14"
- WO 01100541-01, "D3 1M TS Outside Fuel Oil Storage Sample Fuel Oil"
- DOS 0040-02, "Operator Oil Sampling for Offsite Laboratory Analysis," Revision 84
- DOS 6600-01, "Diesel Generator Surveillance Tests," Revision 104
- IR 699333, "D2 Diesel Fuel Oil Storage Tank Exceeds Tech Spec Limit"
- IR 696613, "DOS 6600-06 B-A LPCI [low pressure core injection] Time Delay"

1EP2 Alert and Notification System (ANS) Evaluation

- Off-Site Emergency Prompt Alert and Notification System Addendum for the Dresden Nuclear Power Station; dated January 1994
- Dresden Nuclear Power Station Prompt Alert and Notification System Design Study Modifications in Response to FEMA Review and Evaluation; dated September 17, 2004

- Report on Technical Review of the Dresden Nuclear Power Station Design Study for Elimination of Redundant Sirens and Total Contiguous Emergency Planning Zone Coverage for Homeland Security/Federal Emergency Management Agency; dated February 4, 2004
- Dresden Station Off-Site Test Plan; dated December 2006
- Dresden Station Warning System Annual Maintenance and Operational Reports for October 4 through December 4, 2007, and September 25 through November 30, 2006
- Exelon Semi-Annual Dresden Station Siren Reports for January 1 through June 30, 2007, and January 1 through December 31, 2006
- Exelon Semi-Annual Reviews of First and Second Halves 2006 Dresden Siren Data; dated November 11, 2006, and May 10, 2007
- Dresden Station Daily Siren Operability Reports for January 2 through December 31, 2007
- AR 00591997; Dresden EP Focused Self-Assessment Results – Siren Out-of-Service Report; dated February 15, 2007
- AR 00571951; EP Check-In Deficiency – Braidwood 2006 Pre-NRC Program Inspection; dated December 21, 2006

1EP3 Emergency Response Organization (ERO) Augmentation Testing

- EP-AA-112; Emergency Response Organization/Emergency Response Facility Activation and Operation; Revision 12
- EP-AA-112-100-F-06; Midwest Emergency Response Organization Notification and Augmentation; Revision G
- TQ-AA-113; Emergency Response Organization Training and Qualification; Revision 10
- Dresden Station Emergency Response Organization Emergency Preparedness Duty List; dated January 14, 2008
- Dresden Station Emergency Response Organization – Craft Personnel; dated January 14, 2008
- Dresden Station Craft Personnel Annual EP Training Report; dated January 14, 2008
- Dresden Station Monthly Call-In Augmentation Drill Results; dated January 18 through December 5, 2007
- Dresden Station Monthly Call-In Augmentation Drill Results; dated January 18 through December 21, 2006
- October 18, 2006, Augmentation Drive-In Drill Re-demonstration Results; dated November 6, 2006
- Dresden Station Drive-In Drill Augmentation Drill Results; dated October 2 and October 18, 2006
- Operations Department Organization Chart; dated January 15, 2008
- Dresden Station Emergency Response Organization Teams; dated January 14, 2008
- AR 00683168; Emergency Preparedness Dialogic Issue for Call-In Drill; dated October 11, 2007
- AR 00572535; Back-Up Pager Activation System Test Results; dated December 22, 2006
- AR 00546404; Procedure Requirements/Drill Performance Issues; dated October 19, 2006
- AR 00541087; Dresden Station Drive-In Drill OSC Staff Performance; dated October 6, 2006
- AR 00528776; Non-Duty ERO Personnel Not Responding to Pager Activations; dated September 8, 2006
- AR 00459891; EP Pager Test of February 9, 2006, Had Four On-Duty Persons Not Respond; dated February 28, 2006

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies

- Exelon Nuclear Standardized Radiological Emergency Plan, Section O; Emergency Response Training; Revision 19
- NOSA-DRE-0704; Dresden Station Emergency Preparedness Audit; dated May 2, 2007
- NOSA-DRE-06-03; Dresden Station Emergency Preparedness Audit; dated April 19, 2006
- ASSA 701554; Dresden Station 2008 NRC Baseline Program Inspection Readiness Assessment; dated January 8, 2008
- Dresden Station 2007 NRC Graded Exercise Evaluation Report; dated March 21, 2007
- AR 00718068; Emergency Preparedness Focused Self-Assessment Identifies Deficiency; dated January 4, 2008
- AR 00622314; Meteorology Instrument Accuracy Does Not Meet Requirement; dated April 26, 2007
- AR 00618849; Dresden Station NRC Exercise EOF ERO Performance; dated April 18, 2007
- AR 00611051; Dresden 2007 NRC Graded Exercise TSC Demonstration Criteria; dated March 30, 2007
- AR 00607981; Dresden 2007 EP NRC Exercise Weakness Exercise Management and Scenario Control; dated March 23, 2007
- AR 00591985; Dresden Focused Self-Assessment Results – Reports Missing; dated February 15, 2007
- AR 00574311; P2I-1 Off-Site Agency Interface – West; dated May 25, 2007
- AR 00469749; P2I-1 Off-Site Agency Interface – West; dated May 29, 2006
- AR 00478479; Inadequate Annual Review of Letters of Agreement; dated April 13, 2006
- AR 00440115; P2I-1 Off-Site Agency Interface; dated May 15, 2006

2OS3 Radiation Monitoring Instrumentation and Protective Equipment

- RP-DR-901; Operation of the NMC Wind-2B Continuous Air Monitor; Revision 8
- RP-AA-700; Controls for Radiation Protection Instrumentation; Revision 2
- RP-DR-730; Calibration Frequencies for Radiation Protection Survey Instruments; Revision 0
- DRP-5822-10; Operation and Calibration of the Eberline PM-7 Portal Monitors; Revision 01
- DRP-5822-07; Calibration, Maintenance and Operation of the IPM-9D Whole Body Frisking Monitor; Revision 02
- DRP-5822-08; Sensitivity Checks of Personnel Contamination Monitors; Revision 01
- Instrument Calibration Data Sheet for the PCM-2; Serial No. 480; dated August 23, 2007, Serial No. 472; dated September 5, 2007
- PM-7 Calibration Reports; Instrument Nos. 1, 2, 3, 4, 6 and 7; dated various periods in 2007
- SAM Calibration Data Sheet; Instrument No. 222 and 236; dated June 11, 2007
- IPM-9D Calibration Data Sheet; Monitor No. 295, 294, 293, 291, 290, 289, 288 and 286; dated various periods in 2007
- RP-DR-900; Calibration Record for Unit 2 and Unit 3 Drywell CAMs; dated October 23, and December 4, 2007
- Unit 2/3 Refuel Floor CAM Calibration Record; dated January 31, 2007
- Certificate of Calibrations; MGP Telepole (Serial No. 6696-021); dated September 27, 2007; MGP Ram Gam (Serial No. 1803-064); dated July 2, 2007; Bicron RSO-50E (Serial No. C052G); dated January 4, 2007; MGP AMP-100 (Serial No. 5095-044); dated September 4, 2007; and Eberline PNR-4 (Serial No. 1288); dated October 12, 2007
- DIS-1700-21; Unit 2 Reactor Building Vent Radiation Monitor Calibration; dated October 18, 2007
- DIS-1600-16; Drywell High Radiation Monitor Calibration; Unit 2 dated November 11, 2007 and Unit 3 dated November 21, 2006

- DIS-1800-05; Calibration Data Sheets for Unit 2/3 Reactor Water Cleanup ARM, HPCI Cubicle ARM, Air Ejector ARM, Control Rod Drive Area ARM and Radwaste Pump Room ARM; dated various periods in 2007
- Calibration Report for the Canberra Whole Body Count System at Dresden Generating Station; dated September 24, 2007
- SCBA Regulator Flow/Leak Test Results; dated July 30 – August 2, 2007
- RP-DR-826; MSA Self-Contained Breathing Apparatus Inspection; Revision 10
- SCBA Inspection and Functional Test Surveillance Records; dated January 2006 – December 2007
- Training Certificates for Oiland Safety, Holland Illinois, Authorized SCBA Repair Technicians; dated July 1, 2005
- Respiratory Qualification and Training Matrix; various periods in 2007
- Lesson Plan for Dresden Station Respiratory Protection Level II Training;
- Module N-GRS2-MSA; Revision 4
- AR 00609152; MSA Mask Failure; dated March 26, 2007
- AR 00707544; SCBA Malfunction During Fire Drill; dated December 5, 2007
- AR 00627242; Negative Trend for SCBA Equipment; dated May 9, 2007
- AR 00649144; Incorrect Respirator Mask identified With Fire Brigade SCBAs; dated July 11, 2007
- Radcal Corporation Report of Calibration for Ion Chamber Model 10 X5-6 (SN 3837), Model 10X5-180 (SN 5668), and Radiation Monitor Model 1015C (SN 1791); dated November 7, 2006
- Self-Assessment Report – Radiation Monitoring Instrumentation and Protective Safety Equipment; dated December 19, 2007
- Radiation Protection Audit Report; NOSA-DRE-07-06; dated September 25, 2007
- RP-DR-827; Use of the Eagle Breathing Air Compressor System; Revision 1

4OA1 Performance Indicator Verification

- Monthly Data Elements for RETS/ODCM Radiological Effluents; dated January 2007 – December 2007
- Liquid and Gaseous Effluent Summary Data and Dose Calculation Results; dated various periods in 2007

Drill and Exercise Performance (DEP)
- EP-AA-125-1002; ERO Performance – Performance Indicator Guidance; Revision 4
- NRC Drill and Exercise Performance Data for January through September 2007
- AR 00540231; Training – Exam Failures for Drill and Exercise Performance Indicator; dated October 5, 2006

Emergency Response Organization Participation
- EP-AA-125-1003; ERO Readiness – Performance Indicator Guidance; Revision 6
- NRC Emergency Response Organization Drill Participation Data for January through September 2007

Alert and Notification System Reliability (ANS)
- EP-AA-125-1001; EP Performance Indicator Guidance; Revision 5
- Dresden Station Siren Monthly Operability Reports for January through September 2007
- AR 00666008; Braidwood Alert and Notification System Outage of Greater than 25 Percent; dated August 29, 2007

LIST OF ACRONYMS USED

ANS	Alert and notification System
ARM	Area Radiation Monitor
AR	Assignment Report
CAM	Continuous Air Monitor
CAP	Corrective Action Program
CCSW	Containment Cooling Service Water
CEDE	Committed Effective Dose Equivalent
CFR	Code of Federal Regulations
DBA	Design Basis Accident
DC	Direct Current
DG	Diesel Generator
DRP	Division of Reactor Projects
DRS	Division of Reactor Safety
EDG	Emergency Diesel Generator
EP	Emergency Preparedness
EPU	Extended Power Uprate
EQ	Environmentally Qualified
ERO	Emergency Response Organization
FSAR	Final Safety Analysis Report
IMC	Inspection Manual Chapter
IR	Issue Report
LOCA	Loss of Coolant Accident
LORC	Loss of Room Cooling
LPCI	Low Pressure Coolant Injection
M&TE	Maintenance and Test Equipment
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
PI	Performance Indicator
PM	Planned or Preventative Maintenance
RCA	Radiologically Controlled Area
RETS	Radiological Effluent Technical Specification
SBLC	Standby Liquid Control
SCBA	Self-Contained Breathing Apparatus
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
UHS	Ultimate Heat Sink
URI	Unresolved Item
WO	Work Order