

November 26, 2001

EA-01-230

Mr. Oliver D. Kingsley, President  
Exelon Nuclear  
Exelon Generation Company, LLC  
Quad Cities Nuclear Power Station  
4300 Winfield Road  
Warrenville, IL 60555

SUBJECT: QUAD CITIES NUCLEAR POWER STATION  
NRC INTEGRATED INSPECTION REPORT 50-254/01-12; 50-265/01-12  
AND NOTICE OF VIOLATION

Dear Mr. Kingsley:

On August 14, 2001, the NRC completed an inspection at your Quad Cities Units 1 and 2 reactor facilities. The enclosed report documents the inspection findings which were discussed on August 14, 2001, with Mr. Tulon 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 information developed during the inspection, the NRC has determined that a violation of NRC requirements occurred. The violation is cited in the enclosed Notice of Violation (Notice) and the circumstances surrounding it are described below and in detail in the subject inspection report.

On May 1, 2001, a Unit-2 emergency diesel generator 24 hour endurance surveillance test was prematurely stopped due to a solenoid valve failure in the fuel transfer system. After your staff performed troubleshooting, the test was re-performed on May 3, 2001, and the valve failed again, however, your operators took recovery actions that allowed the surveillance test to continue to a satisfactory completion. The impact of the fault exposure hours resulting from the failure on the unavailability of the emergency diesel generator would have resulted in the Unit-2 Emergency AC Power System Unavailability Performance Indicator (PI) changing from Green to Red. This change would typically result in additional NRC inspection.

The Unit-2 Emergency AC Power System Unavailability PI was reported as Green on July 23, 2001. You indicated in the comments section of your PI data submittal that, in accordance with your interpretation of the guidance, the fault exposure hours resulting from the solenoid valve failure should not be counted against the PI because the failure was design related. In addition, at the time of the PI submittal, your staff raised other questions regarding reporting of availability for this issue. These issues, including the appropriate credit for operator recovery action and use of fault exposure hours in calculating unavailability, are under review

as part of a broader initiative to clarify the Safety System Unavailability (SSU) PIs and standardize reporting guidance.

Providing inaccurate information to the NRC constitutes a violation of 10 CFR 50.9, "Completeness and accuracy of information," which requires that information provided to the Commission by licensees be complete and accurate in all material respects. In your July 23, 2001, performance indicator data submittal your comment field entry indicated that the solenoid valve failure was caused by a design flaw. The NRC inspection concluded that there was insufficient basis to support this position at the time this submittal was made, resulting in the submission of inaccurate information. Testing completed by Exelon in mid August 2001 determined that the root cause of the solenoid valve failure was not a design flaw related to cable insulation, as originally believed, confirming that you had no basis to exclude the fault exposure hours associated with this failure. In addition, you failed to correct your July 23, 2001, submittal.

Inaccurate reporting that would have caused a PI to change from Green to Red would normally result in the violation being cited at Severity Level III. However, when evaluating the risk significance of the solenoid valve failure with consideration for available operator recovery actions the issue was determined to be of very low safety significance (i.e., Green). Therefore, based on the safety significance of the issue, in accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions" (Enforcement Policy), NUREG-1600, the NRC has categorized this violation at Severity Level IV. The current Enforcement Policy is included on the NRC's web site at [www.nrc.gov/OE](http://www.nrc.gov/OE).

Additionally, the question your staff raised regarding the counting of fault exposure hours is being reviewed as part of overall guidance in this area. Consequently, the Unit-2 Emergency AC power System Unavailability PI currently need not count the fault exposure hours associated with the solenoid valve failure pending the resolution of your question.

You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. The NRC will use your response, in part, to determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be 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). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/NRC/ADAMS/index.html> (the Public Electronic Reading Room).

Sincerely,

*/RA/*

Geoffrey E. Grant, Director  
Division of Reactor Projects

Docket Nos. 50-254; 50-265  
License Nos. DPR-29; DPR-30

Enclosures: 1. Notice of Violation  
2. Inspection Report 50-254/01-12; 50-265/01-12

cc w/encls: W. Bohlke, Senior Vice President, Nuclear Services  
C. Crane, Senior Vice President - Mid-West Regional  
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G. Barnes, Quad Cities Station Manager  
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M. Aguilar, Assistant Attorney General  
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DATE	10/26/01	10/26/01	10/26/01	11/26/01						

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**\* Received HQ concurrence on 10/23 via emails from R. Nolan, OE and M. Satorious, NRR**

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## NOTICE OF VIOLATION

Exelon Generation Company, LLC  
Quad Cities Nuclear Power Station, Units 1 and 2

Docket Nos. 50-254; 50-265  
License Nos. DPR-29; DPR-30  
EA-01-230

During an NRC inspection conducted on July 01 through August 14, 2001, a violation of NRC requirements was identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," NUREG-1600, the violation is listed below:

10 CFR Part 50.9 requires, in part, that information provided to the Commission by a licensee shall be complete and accurate in all material respects.

Contrary to the above, on July 23, 2001, the licensee provided information to the Commission which was not complete and accurate in all material respects. Specifically, the licensee indicated that the root cause of a Unit 2 emergency diesel generator fuel oil transfer system solenoid valve failure resulted from a design deficiency without sufficient justification to support this claim. Subsequent testing performed by the licensee indicated that the failure was not the result of design deficiencies associated with cable insulation and that the root cause of the valve failure was unknown at that time. This information is material to the NRC because it was used by the licensee as a basis to exclude approximately 9 months of fault exposure hours as part of the Second Quarter 2001 Unit 2 Emergency Alternating Current - Safety System Unavailability performance indicator submittal.

This is a Severity Level IV violation (Supplement VII).

Pursuant to the provisions of 10 CFR 2.201, Exelon Generation Company, LLC, is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555 with a copy to the Regional Administrator, Region III, and a copy to the NRC Resident Inspector at the Quad Cities Nuclear Power Station, within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation" and should include for each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation or severity level, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken to avoid further violations, and (4) the date when full compliance will be achieved. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice, an order or a Demand for Information may be issued as to why the license should not be modified, suspended, or revoked, or why such other action as may be proper should not be taken. Where good cause is shown, consideration will be given to extending the response time.

If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

Because your response 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), to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction. ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/NRC/ADAMS/index.html> (the Public Electronic Reading Room). If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.790(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days.

Dated this \_\_\_\_ day of October 2001

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 50-254; 50-265  
License Nos: DPR-29; DPR-30

Report No: 50-254/01-12; 50-265/01-12

Licensee: Exelon Generation Company, LLC

Facility: Quad Cities Nuclear Power Station, Units 1 and 2

Location: 22710 206th Avenue North  
Cordova, IL 61242

Dates: July 01 through August 14, 2001

Inspectors: C. Miller, Senior Resident Inspector  
K. Stoedter, Senior Resident Inspector  
J. Adams, Resident Inspector  
J. House, Senior Radiation Specialist  
R. Schmidt, Radiation Specialist

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



## SUMMARY OF FINDINGS

IR 05000254-01-12, IR 05000265-01-12, on 07/01 - 08/14/2001, Exelon Nuclear, Quad Cities Nuclear Power Station, Units 1 & 2, Performance Indicator Verification.

The inspection was conducted by resident inspectors. This inspection identified a Severity Level IV violation. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply are indicated by "No Color" or by the severity level of the applicable violation. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website at <http://www.nrc.gov/NRR/OVERSIGHT/index.html>.

### **Cornerstone: Performance Indicator Verification**

No Color. The inspectors identified that the licensee failed to report fault exposure hours for the failure of a fuel oil transfer solenoid valve to open during the Unit 2 emergency diesel generator (EDG) 18 month endurance test. The second quarter 2001 data reported to the NRC showed no fault exposure hours recorded for Unit 2 EDG. However, the inspectors found that fault exposure hours from a failed endurance run on May 1, 2001, should have been reported since only the time of the failure's discovery was known with certainty. Fault exposure hours going back to the last successful load test of the EDG on January 14, 2000, were not included in the licensee's July 2001 performance indicator data submittal for the Unit 2 Emergency Alternating Current (AC) - Safety System Unavailability performance indicator. Had the performance indicator data been properly reported, the performance indicator color would have been Red. Failure to properly report the performance indicator was considered a Severity Level IV violation of 10 CFR 50.9. (Section 40A2)

## Report Details

### 3. REACTOR SAFETY

#### Plant Status

Unit 1 entered the period operating at or near full power until July 22, when power was reduced to approximately 86 percent to comply with the station's National Pollutant Discharge Elimination System (NPDES) permit. Unit 1 was returned to full power operation later that day. On August 2, Unit 1 power was reduced to 93 percent due to a Unit 2 main transformer fire and recovery of service water system pressure. Unit 1 was restored to full power later that day following the restoration of the switchyard. Unit 1 operated at or near full power for the remainder of the period, except for minor power decreases for turbine testing and/or control rod positioning.

Unit 2 entered the period operating at or near full power until July 2, when power was reduced to 87 percent at the load dispatcher's request. Unit 2 returned to full power later that day and remained at full power until July 20, when power was reduced to reverse condenser flow. From July 20 through 26, Unit 2 power was reduced several times due to high river temperatures, to maintain NPDES compliance, and to allow for condenser flow reversal. Unit 2 operated at or near full power until August 2, when a lightning induced failure of the Unit 2 main transformer resulted in a reactor trip, an unusual event, a fire in the main transformer, and a loss of offsite power. Unit 2 ended the period shutdown to replace the main transformer.

#### 1R05 Fire Protection (71111.05)

##### .1 Fire Zone Walkdowns and Condition Report Reviews

###### a. Inspection Scope

The inspectors conducted fire protection walkdowns of the following risk significant areas of the plant:

- Unit 1 Battery Room (Fire Zone 7.1),
- Unit 2 Battery Room (Fire Zone 7.2),
- Safe Shutdown Makeup Pump Room (Fire Zone 5.0),
- Unit 2 Standby Liquid Control (Fire Zone 1.1.2.5),
- ½ Emergency Diesel Generator Room (Fire Zone 9.3),
- Auxiliary Electric Equipment Room (Fire Zone 6.3),
- Computer Room in the Auxiliary Electric Equipment Room (Fire Zone 4.0), and
- Cable Spreading Room (Fire Zone 3.0).

Each of these fire zones contained equipment related to the Mitigating Systems Cornerstone. The inspectors verified the proper control of transient combustibles and ignition sources, the material condition of fire detection and fire suppression systems, the operational lineup of fire detection and fire suppression systems, the maintenance of fire protection equipment, and the material condition and operational status of fire barriers.

The inspectors also reviewed and discussed the licensee's corrective actions associated with Condition Reports Q2001-02105, "Unit 1 Battery Floor Fire Rating Incorrectly Identified in the Updated Fire Hazards Analysis"; Condition Report Q2001-02380, "Discrepancies Found In Pre-Fire Plans"; and Q2001-02014, "Inadequate Guidance for Failure to Meet Operations Shift Manning Requirements" with the fire marshal, fire protection engineer, and licensee management.

b. Findings

No findings of significance were identified.

.2 Fire Brigade Response to a Fire in the Unit 2 Main Power Transformer

a. Inspection Scope

On August 2, 2001, the inspectors observed the fire brigade's response to a fire in the Unit 2 main power transformer. The inspectors observed the proper use of protective clothing and turnout gear, self-contained breathing apparatus, fire hoses, other fire fighting equipment, and the command and control of the five local fire departments that responded to the fire. The inspectors reviewed the pre-fire plans for the Unit 2 main power transformer and verified that the fire brigade attacked the fire in accordance with the plans. The inspectors observed plant personnel assess other adjacent plant areas for fire propagation, verified plant personnel effectively controlled plant ventilation systems to control the admission of smoke to the plant, and observed plant personnel check the plant's air quality.

The inspectors reviewed a critique of the licensee's fire response and verified that areas for improvement were entered into the licensee's corrective action program. The inspectors also reviewed Condition Report Q2001-02574, "T2 Fire Issues From Fire Brigade Critique."

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification (71111.11)

a. Inspection Scope

On July 11, 2001, the inspectors observed and assessed Crew B licensed operator performance during licensed operator as-found simulator training sessions. During the observations, the inspectors focused on the operators' response to alarms, the unit supervisor's command and control of crew activities, communication practices, procedural adherence, and the shift manager's implementation of emergency plan requirements. The inspectors observed the training evaluators' assessment of the crew's performance ensuring deficiencies were identified and critiqued. The inspectors verified that the operators properly completed all critical tasks during the scenario.

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation (71111.12)

a. Inspection Scope

The inspectors reviewed the following risk significant systems associated with the Initiating Events and Mitigating Systems Cornerstones:

Unit	System	Maintenance Rule Function
1	250 Volts Direct Current	Z8350-03
2	Station Blackout Diesel	Z6620
2	Residual Heat Removal	Z1000-11
1	Feed Water Level Control	Z0600-01

The inspectors reviewed problems documented in the following condition reports for appropriate disposition with respect to the Maintenance Rule:

- Q2000-02218, “Unexpected Voltage Drop Across 480 Volt Motor Control Center Cubical for the Unit 1 250 Volt Direct Current Battery Charger”;
- Q2001-00282, “Station Blackout Diesel Generator Breaker Failed to Close”;
- Q2001-00296, “2A Residual Heat Removal Heat Exchanger Degraded When Reversing Valve Failed to Reposition”;
- Q2001-00332, “2B Residual Heat Removal Service Water Pump Breaker Failed to Charge Properly During System Restoration”; and
- Q2001-00305, “Slow Feedwater Regulating Valve Response on Unit 1.”

The inspectors reviewed the licensee’s implementation of the maintenance rule, including a review of scoping, performance criteria, performance monitoring, expert panel meeting minutes, short-term and long-term corrective actions, and current equipment performance status. The inspectors discussed system problems and maintenance rule classification with engineering personnel.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed the licensee’s evaluation of plant risk for emergent maintenance activities associated with indications that the 1B turbine building closed cooling water

heat exchanger, the 1A recirculation motor generator set oil cooler, and the 1C recirculation motor generator set oil cooler service water sides were fouling. The inspectors observed that the emergent problems with the heat exchangers had occurred concurrent with emergent equipment problems with the trash rake motor, main condenser back pressure instrumentation, unplanned power reductions due to condenser back pressure, and a number of external factors associated with hot weather, low river flow, elevated river temperature, and a large amount of debris in the river. During the inspection, the inspectors assessed the availability of redundant trains of equipment and verified that the licensee considered external conditions in their assessment of the plant risk. The inspectors also interviewed operations and engineering personnel and reviewed Nuclear Station Procedure WC-AA-103, "On-Line Maintenance," Revision 3.

The following condition reports were also reviewed:

- Q2001-02273, "Low Water Levels on the River Side of the Floating Boom at the Intake";
- Q2001-02305, "1A and 1C MG Oil Coolers Clogged";
- Q2001-02307, "Unexplained Condenser Backpressure Indications";
- Q2001-02311, "High Debris Volume in the River Water Causing Plant Problems";
- Q2001-02318, "Unplanned Unit 2 Load Drop Due to Low Condenser Backpressure"; and
- Q2001-02322, "Trash Rake Raise/Lower Motor Overheated."

The inspectors verified that identified problems were being entered into the program and considered for effect on the plant's risk profile.

b. Findings

No findings of significance were identified.

1R14 Nonroutine Plant Evolutions (71111.14)

b. Inspection Scope

The inspectors observed operator performance during a Unit 2 reactor trip, transformer fire, and loss of offsite power event on August 2, 2001. The inspectors verified that operator actions were consistent with emergency and abnormal operating procedures and that emergency classifications and reporting requirements were appropriate. Initial risk estimations were made to determine if follow-up inspections were needed during the event. The inspectors determined that since onsite power sources were available, and offsite power was restored within a few hours, additional inspections were not necessary at the time of the event.

c. Findings

No findings of significance were identified.

## 1R15 Operability Evaluations (71111.15)

### a. Inspection Scope

The inspectors reviewed operability evaluations associated with a Unit 1 high pressure coolant injection master trip unit 1-2391-01D failure and a pinhole leak in the Unit 2 residual heat removal service water system line 2-1043-A-14-L. The inspectors verified that the evaluations were technically adequate, justified continued operation, considered other existing degraded conditions where applicable, and referenced applicable sections of the Updated Final Safety Analysis Report and other applicable design basis documentation. The inspectors reviewed the following:

- Condition Report Q2001-01977, "Unexpected Gross Fail Light From HPCI 1D Reactor Low Pressure Master Trip Unit";
- Supporting Operability Documentation for Condition Report Q2001-01977;
- Condition Report Q2001-02132, "Residual Heat Removal Service Water Line 2-1043-A-14-L Has Pinhole Leak"; and
- Supporting Operability Determination for Condition Report Q2000-03416.

The inspectors discussed the problems identified in the referenced condition reports with licensee engineers.

### b. Findings

No findings of significance were identified.

## 1R16 Operator Workarounds (71111.16)

### a. Inspection Scope

The inspectors reviewed the following documents during a semi-annual cumulative review of operator workarounds.

- Open Operator Workarounds and Operator Challenges List dated July 25, 2001;
- Operator Burden Review Quarterly Report dated April 23, 2001;
- Condition Report Q2001-01187, "Air Operated Valve 1-1904-46A Fuel Pool Filter/Demin Inlet Valve Control Switch"; and
- Condition Report Q2001-02036, "Potential Operator Workaround/Operator Challenge."

The inspectors evaluated the effects of the previously existing and new operator workarounds and operator challenges since the last semi-annual review. The inspectors also interviewed operators, toured plant areas to look for equipment that was degraded but not considered on the workaround list, and reviewed condition reports which referred to operator workarounds.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

On July 16, 2001, the inspectors observed the performance of and reviewed the results of the Unit 2 Quad Cities Instrument Surveillance Procedure QCIS 0200-06, "Low-Low Reactor Water Level Calibration and Functional Test," Revision 20. This surveillance procedure tested risk significant reactor vessel level instrumentation under the Mitigating Systems Cornerstone.

The inspectors reviewed the results of the Nuclear Station Chemistry Procedure CY-QC-130-700, "Diesel Fuel Oil Testing," Revision 1, that was performed on June 26, 2001. The fuel oil tested was intended for use in the station's emergency diesel generators, risk significant equipment under the Mitigating Systems Cornerstone. Condition Report Q2001-02170 regarding incorrect recording of fuel oil testing results was also reviewed to verify that the licensee had identified and implemented appropriate corrective actions.

On August 1, 2001, the inspectors observed the performance of and reviewed the results of the Unit 2 Quad Cities Operating Surveillance Procedure QCOS 1000-04, "Residual Heat Removal Service Water Pump Operability Test," Revision 27. The licensee performed the test on the C and D residual heat removal pumps, both risk significant components under the Mitigating Systems Cornerstone.

During the observation and reviews of the surveillance testing listed above, the inspectors verified that Technical Specifications, Updated Final Safety Analysis Report, and licensee's procedure requirements were met. The inspectors verified that the testing performed by the licensee demonstrated that the tested structure, system, or component was capable of performing its intended functions.

b. Findings

No findings of significance were identified.

**Emergency Preparedness (EP)**

1EP1 Drill, Exercise, and Actual Events (71114.01)

a. Inspection Scope

The inspectors observed the licensee's actions taken in response to a Unit 2 loss of offsite power and main transformer fire on August 2, 2001. The Nuclear Accident Reporting System (NARS) forms, the Event Notification System (ENS) worksheets, and the event classification were reviewed to determine if the classification and the reporting

to the NRC and other agencies was appropriate. The inspectors reviewed condition reports generated from the event including Q2001-02438, "Inability to Obtain Accurate Data via Computer Points During Event;" Q2001-02439, "NARS and ENS Communication Difficulties;" Q2001-02441, "Loss of U2 Main Power Transformer;" and other reports related to other equipment deficiencies. The licensee was continuing to address these issues in their corrective action program at the conclusion of the inspection.

b. Findings

No findings of significance were identified.

**2. RADIATION SAFETY**

**Cornerstone: Occupational Radiation Safety**

2OS1 Access Controls for Radiologically Significant Areas (71121.01)

.1 Plant Walkdowns, Radiological Boundary Verifications and Radiation Work Permit Reviews

a. Inspection Scope

The inspectors conducted walkdowns of the radiologically protected area to verify the adequacy of radiological area boundaries and postings including high and locked high radiation areas in the Units 1 and 2 Reactor Buildings, Turbine, and Radwaste Buildings. Confirmatory radiation measurements were taken to verify that these areas and selected radiation areas were properly posted and controlled in accordance with 10 CFR Part 20, licensee procedures and Technical Specifications. Radiation work permits for radiologically significant work were reviewed for protective clothing requirements and electronic dosimetry alarm setpoints.

b. Findings

No findings of significance were identified.

.2 Job-In-Progress Reviews

a. Inspection Scope

The inspectors observed portions of a valve replacement job. Radiation work permit requirements and the As-Low-As-Reasonably-Achievable briefing package for the job were reviewed. The inspectors verified that dosimetry placement, alarm set points, job site radiological surveys, radiological exposure estimates, contamination controls, and postings were adequate given the job's radiological conditions. The inspectors also attended the pre-job briefing to determine if radiological information was adequately communicated to the workers.



b. Findings

No findings of significance were identified.

2OS3 Radiation Monitoring Instrumentation (71121.03)

.1 Identification of Radiological Monitors Associated With High/Very High Radiation Areas

a. Inspection Scope

The inspectors completed walkdowns and reviewed calibration records to verify the accuracy and operability of radiation monitoring instruments used for the protection of occupational workers. Instrumentation included area radiation monitors, continuous air monitors, portable survey meters, the whole body counter, portal monitors, electronic dosimeters, and tool monitors.

The Updated Final Safety Analysis Report was reviewed to identify those area radiation monitors that were associated with transient high and very high radiation areas. These monitors included, but were not limited to, the following:

- Primary Containment Monitors
- Drywell Radiation Monitors
- Radwaste Building Monitors
- Transverse Incore Probe Drive Machinery and Transverse Incore Probe Room Monitors
- Control Rod Drive Hydraulic Control Unit Monitors
- Standby Gas Treatment Area Monitors
- Fuel Pool Pump and Heat Exchanger Area Monitors
- Post Accident Sampling System Area Monitors

Continuous air monitors were identified from the Updated Final Safety Analysis Report in the following locations:

- Reactor Building Vents
- Turbine Building Vents
- Off-Gas Fuel Building Vent
- Drywell

The inspectors performed a walkdown of selected area radiation monitors and continuous air monitors, in order to verify that locations were as described in the Updated Final Safety Analysis Report.

b. Findings

No findings of significance were identified.

.2 Calibration and Operability of Radiological Instrumentation

a. Inspection Scope

The inspectors reviewed the most recent calibrations and alarm set points for selected area radiation monitors and continuous air monitors. A representative sample of current calibration records were reviewed for the whole body counter, personnel contamination monitors, portable radiation survey instruments, electronic dosimeters, and tool monitors. The inspectors observed the calibration process for portable survey instruments, reviewed source check data, and observed source checks in order to verify compliance with procedures.

b. Findings

No findings of significance were identified.

.3 Problem Identification and Resolution

a. Inspection Scope

The inspectors reviewed the licensee's self-assessments, audits, and condition reports covering radiological incidents involving personnel internal contamination events and radiological instrumentation, to verify that the licensee could identify, track, and correct radiological problems in these areas.

b. Findings

No findings of significance were identified.

.4 Respiratory Protection - Self-Contained Breathing Apparatus

a. Inspection Scope

The inspectors reviewed the status and surveillance records for self-contained breathing apparatus that was located in various areas onsite, including those units reserved for fire brigade and control room personnel. In addition, the inspectors verified that applicable emergency response and control room personnel were properly trained, mask fit, and medically qualified in the use of self-contained breathing apparatus.

b. Findings

No findings of significance were identified.

## Cornerstone: Public Radiation Safety

### SPS3 Radiological Environmental Monitoring and Radioactive Material Control Programs (71122.03)

#### .1 Review of Environmental Monitoring Reports and Data

##### a. Inspection Scope

The inspectors reviewed the licensee's Annual Radiological Environmental Monitoring Report for the year 2000. Sampling location commitments, monitoring and measurement frequencies, land use census, the vendor laboratory's Interlaboratory Comparison Program, and data analysis were assessed. Anomalous results including data, missed samples, inoperable or lost equipment were evaluated. The review of the Radiological Environmental Monitoring Program was conducted to verify that the Radiological Environmental Monitoring Program was implemented as required by the Offsite Dose Calculation Manual and associated Technical Specifications, and that changes, if any, did not affect the licensee's ability to monitor the impacts of radioactive effluent releases on the environment. The most recent quality assessment of the licensee's Radiological Environmental Monitoring Program vendor was reviewed to verify that the vendor laboratory performance was consistent with licensee and NRC requirements.

##### b. Findings

No findings of significance were identified.

#### .2 Walkdowns Of Radiological Environmental Monitoring Stations and Meteorological Tower

##### a. Inspection Scope

The inspectors conducted a walkdown of selected environmental air sampling stations and thermoluminescent dosimeters to verify that their locations were consistent with their descriptions in the Offsite Dose Calculation Manual, and to evaluate the equipment material condition. The meteorological monitoring site was observed to validate that sensors were adequately positioned and operable. The inspectors reviewed a sample of monthly reports submitted to the licensee by its meteorological services vendor regarding the onsite meteorological monitoring program's data recovery rates, routine calibration and maintenance activities, and non-scheduled maintenance activities to verify that the meteorological instrumentation was operable, calibrated, and maintained in accordance with licensee procedures. The inspectors also verified that readouts of wind speed, wind direction, and atmospheric stability measurements were available in the control room and that the readout instrumentation was operable.

##### b. Findings

No findings of significance were identified.

.3 Review of Radiological Environmental Monitoring Program Sample Collection and Analysis

a. Inspection Scope

The inspectors accompanied a licensee representative and a Radiological Environmental Monitoring Program vendor technician to observe the collection and preparation of air filters, to verify that representative samples were being collected in accordance with procedures and the Offsite Dose Calculation Manual. The inspectors observed the technician perform air sampler field check maintenance to verify that the air samplers were functioning in accordance with procedures. Selected air sampler calibration and maintenance records for 2000 were reviewed to verify that the equipment was being maintained as required. The environmental sample collection program was compared with the Offsite Dose Calculation Manual to verify that samples were representative of the licensee's release pathways. Additionally, the inspectors reviewed results of the vendor laboratory's Interlaboratory Comparison Program to verify that the vendor was capable of making adequate radio-chemical measurements.

b. Findings

No findings of significance were identified.

.4 Unrestricted Release of Material From the Radiologically Controlled Area

a. Inspection Scope

The inspectors evaluated the licensee's controls, procedure, and practices for the unrestricted release of material from radiologically controlled areas and verified that: (1) radiation monitoring instrumentation used to perform surveys for unrestricted release of materials was appropriate; (2) instrument sensitivities were consistent with NRC guidance contained in Inspection and Enforcement (IE) Circular 81-07 and Health Physics Positions in NUREG/CR-5569 for both surface contaminated and volumetrically contaminated materials; (3) criteria for survey and release conformed to NRC requirements; (4) licensee procedures were technically sound and provided clear guidance for survey methodologies; and (5) radiation protection staff adequately implemented station procedures.

The inspectors reviewed the quality control records for radiochemistry instrumentation used to identify and quantify radioisotopes in materials for free release, in order to verify that the instrumentation was calibrated and maintained as required by site procedures. This review included calibrations of gamma spectroscopy/spectrometry systems, liquid scintillation instruments, instrument control charts, and the environmental lower limit of detection capability. The inspectors also reviewed the results of the 2000 Interlaboratory Comparison Program in order to evaluate the licensee's capability to perform radiochemical measurements for free release of materials.

b. Findings

No findings of significance were identified.

.5 Identification and Resolution of Problems

a. Inspection Scope

The inspectors reviewed condition reports, the results of the licensee's Radiological Environmental Monitoring Program self-assessment performed during the second quarter of 2001, and Nuclear Oversight's Field Observations of the Radiological Environmental Monitoring Program to determine if problems were being identified and entered into the corrective action program for timely resolution. The inspectors also reviewed the licensee's overall management of the Radiological Environmental Monitoring Program, including attention to details of the sampling program and the vendor laboratory, in order to evaluate the effectiveness of the Radiological Environmental Monitoring Program in collection and analysis of samples for the detection of offsite radiological contamination.

b. Findings

No findings of significance were identified.

**4. OTHER ACTIVITIES (OA)**

4OA2 Performance Indicator Verification (71151)

.1 Verification of Emergency Alternating Power Sources

a. Inspection Scope

The inspectors reviewed the licensee's performance indicator data submittal for Emergency Alternating Power - Safety System Unavailability. This review included information included on performance indicator data element forms LS-AA-2040 which were used to submit the performance data. Condition Reports 2001-01312 and 2001-01338, which were written to document the two failures of the diesel fuel oil transfer system during two endurance runs of the Unit 2 emergency diesel generator, were also reviewed.

b. Findings

The inspectors identified a Severity Level IV violation due to the licensee's failure to report fault exposure hours for a failed Unit 2 emergency diesel generator 18 month endurance test. Second quarter 2001 data reported to the NRC in July 2001, showed Unit 2 emergency diesel generator unavailability at 1.9 percent, and no fault exposure hours recorded. However, inspectors found that fault exposure hours from a failed emergency diesel generator endurance run on May 1, 2001, should have been reported since only the time of the failure's discovery was known with certainty. Fault exposure hours going back to the last successful load test of the emergency diesel generator that successfully satisfied the plant's load and duration test specifications (January 14, 2000) were not included in the licensee submittal. Had the Performance Indicator been properly reported, in accordance with guidance in NEI 99-02, Revision 1, page 27, lines 33-40, and page 33, lines 23-36, the indicator color would have been Red. Failure

to properly report the Performance Indicator was considered a violation of 10 CFR 50.9 since the indicator color would have changed from Green, as reported by the licensee, to Red had the fault exposure hours been reported.

The first failure occurred on May 1, 2001, during a Unit 2 emergency diesel generator 24 hour endurance run surveillance test (QCOS 6600-20). The fuel oil transfer system had been working about every 50 minutes to refill the emergency diesel generator day tank during the run. At about the 12 hour point, the control room received the low level day tank alarm. The licensee stopped the test, performed troubleshooting, then reran the test 2 days later. During the second endurance run, the fuel oil transfer system worked initially, but failed at about the 12 hour point again. In response to the second failure, operators manually manipulated valves in the fuel oil system to keep the day tank filled, and completed the endurance run.

The licensee found that the solenoid operated valve in the day tank fill line was the most likely component to have failed. Through Exelon lab testing, the licensee was informed that a wire to the solenoid valve in the fuel supply line from the transfer pump to the day tank had some insulation breakdown. Engineers believed this could have caused the solenoid valve to fail to open, which would have prevented the fuel oil transfer pump from supplying fuel to the day tank. When the inspectors went to the licensee's Performance Indicator challenge board on this issue (July 10), engineering managers indicated that no fault exposure hours would be reported because the valve had worked properly during the last 24 hour endurance run and during previous monthly surveillance tests. However, the station decided to perform additional testing and initiate a root cause investigation in order to better evaluate the fuel oil transfer system's performance.

On July 23, the licensee told inspectors that fault exposure hours for this event would not be reported in the Performance Indicator for Emergency Alternating Current System Unavailability. The reason was documented in a "white paper" which the licensee indicated would be available in Condition Report Q2001-01312. The licensee's white paper concluded that fault exposure hours for this issue were not required to be reported because "The lead wires to the solenoid valve were not sufficiently designed to withstand the environmental service conditions over time." That is, the white paper asserted that the insulation was not sufficiently resistant to the normal vibration and heat environment under which it was required to function and that a more robust coil configuration with heat and vibration resistant wire insulation and/or a specified replacement interval evaluating the time, temperature, and vibration effects of the coil lead wires that was sufficiently short to preclude failure would have prevented the subject failure. The "white paper" noted that NEI 99-02, Paragraph 2.2, page 27, indicated that fault exposure hours do not have to be reported for design deficiencies. No confirmed technical basis for these assertions was provided in the white paper.

On July 24, the inspectors indicated that sufficient information to justify that the solenoid failure was design-related did not appear to be present. The inspectors asked the licensee questions to try to determine the nature of the design deficiency, including:

"...describe the specific details of the design deficiency including the design specifications which were inadequate, the design drawing affected, the part numbers of the components which were incorrectly specified, the proper design specification that

should have been used to acquire the proper parts, the specification for vibration and temperature that was used, the specification for vibration and temperature that should have been used, the replacement recommendations regarding age in the design specification, the replacement recommendations that are currently in the design specification for this application, the changes to the design specifications that were made as a result of this discovery, and any other applicable design information which was used to make the determination of design inadequacy..." The inspectors also asked questions related to the environmental conditions in the Unit 2 emergency diesel generator room since the room was not listed as an environmentally qualified harsh environment. At the end of the inspection period, the licensee did not have specific design information related to the nature of the design failure, and indicated that it would provide answers to the questions in a root cause report scheduled for completion on August 23.

Licensee documentation indicated the potentially failed solenoid valve (SO 2-5201) was an ASCO HT8211C89 solenoid valve. The component performed successfully from 1993 until May 2001 in the present application and prior to that for several years in another fuel oil transfer application. Inspectors found that maintenance records for the valve prior to 1993 were not available. In addition, detailed operating records for the valve in either present or former applications had not been assembled for review to determine the part that past operational technique or procedures may have played in the failure. The inspectors found no reason that the design process should have been flagged as the potential root cause of the solenoid valve failure based on maintenance history, industry failure reports or vendor data. The inspectors found no reason that the failed insulation material should have been suspect in the design process. Additionally, the inspectors did not find from the licensee's review or from inspections that unusual environmental conditions existed in the Unit 2 emergency diesel generator room. Therefore, the inspectors did not consider that the licensee had provided enough information to justify that this failure was a design related failure which would be exempt from fault exposure hour reporting. Inspectors informed the licensee that this was the case on August 10, and that if the licensee disagreed, a Frequently Asked Question form should be submitted through NEI to the NRC. Inspectors specified that the Frequently Asked Question form should be directed towards the reporting of equipment failures as design failures if specific design specifications had not been identified as the cause of the failure. (Because other Frequently Asked Questions regarding emergency diesel generator mission time and manual actions had been previously submitted.)

On August 13, the licensee informed the inspectors that the root cause evaluation had been in error when it determined that a shorted wire to the solenoid valve was the cause of the failure. The licensee further indicated that the root cause of the problem was not known. Engineering management indicated that although the cause of failure was not known, because no flaws in maintenance and testing were noted, the failure would still likely be considered a design-related failure because the solenoid valve itself did not last the life of the plant (equivalent to arguing that "normal wear and tear" does not affect components installed at Quad Cities). Inspectors informed the licensee that without a confirmed design specification related root cause being known, it was unclear how the problem was designated as design related.

The inspectors found that the period for reporting this failure was the second quarter 2001 reporting period, which ended June 30, 2001. Performance indicator data for this

period was required to be submitted by July 21, 2001 (the actual reporting date was July 23, 2001). The unavailability performance indicator data for a failure for which time of discovery was known but time of failure was not known should have included fault exposure hours going back to the last successful load test of the emergency diesel generator that successfully satisfied the plant's load and duration test specifications. Failure to accurately report performance indicator data is considered a No-Color finding because the significance determination process cannot be used to evaluate the reporting failure. Part (a) of 10 CFR 50.9 requires that information provided to the Commission by a licensee shall be complete and accurate in all material respects. Failure to report performance indicator data accurately was considered a **Violation of 10 CFR 50.9 (50-265/01-012-01)**. Because submittal of inaccurate information may impact the NRC's ability to carry out its regulatory function, the significance of the violation was assessed using the traditional enforcement process. This violation is in the licensee's corrective action program as Condition Report Q2001-01312.

.2 Verification of Unplanned Scrams, Scrams With Loss of Normal Heat Removal, and Unplanned Power Reductions Greater Than 20 Percent Power

a. Inspection Scope

The inspectors reviewed licensee event reports, operator logs, and licensee power histories from July 2000, through July 2001, in order to verify the licensee's performance indicators for unplanned scrams, scrams with the loss of normal heat removal, and unplanned power reductions greater than 20 percent power.

b. Findings

No findings of significance were identified.

4OA3 Event Follow-up (71153)

.1 Review of Licensee Event Reports

a. Inspection Scope

The inspectors performed an onsite review of records to evaluate root causes and corrective actions for issues identified in licensee event reports, discussed in the Findings Section below, using Inspection Procedure 71153, "Event Follow-up."

For issues described in the licensee event reports, the inspectors evaluated the timeliness, completeness, and adequacy of corrective actions in accordance with requirements of 10 CFR Part 50, Appendix B, Criterion XVI.

b. Findings

(Closed) Licensee Event Report 50-254/2000-006-00: Main Steam Isolation Valve Leak Rate Test Results in Excess of Technical Specification Limits due to Component Wear. On October 9, 2000, both the D inboard and outboard main steam isolation valves failed



individual as-found local leak rate tests. The licensee entered the unacceptable conditions into their corrective action program as condition reports Q2000-03648 and Q2000-03774. The licensee determined that the root cause of the excessive leakage was due to the normal wear of the stellite seat rings. The inspectors reviewed the licensee's root cause report, condition reports, licensee event report, and corrective actions and determined that the event did not warrant evaluation using the significance determination process since the event did not represent deficient licensee performance. However, the significance of the event appears to be minimal since the estimated main steam line leakage rate, corrected for post-accident drywell pressure of 48 pounds per square inch, summed with the overall as-found primary containment leakage resulted in significantly less than the maximum allowable value for the total primary containment leakage. The inspectors determined that this event did not constitute a violation of NRC requirements.

#### 4OA6 Meetings

##### .1 Inspection Period Exit Meeting

The inspectors presented the inspection results to Mr. Tulon and other members of licensee management at the conclusion of the inspection on August 14, 2001. The licensee acknowledged the findings presented. No proprietary information was identified.

##### .2 Interim Exit Meeting

Senior Official at Exit:	Timothy Tulon, Site Vice President
Date:	July 13, 2001
Proprietary:	No
Subject:	Radiological Environmental Monitoring Program, Radiological Monitoring Instrumentation, and Access Control to Radiological Areas
Change to Inspection Findings:	No

##### .3 Annual Assessment Public Meeting

The NRC Resident Inspectors assigned to Quad Cities Nuclear Station, the Division of Reactor Projects Chief, Branch 1, and the Region III Deputy Regional Administrator met on July 19, 2001, with Exelon Corporation to discuss the NRC's Reactor Oversight Process annual assessment of safety performance for the Quad Cities Nuclear Station during the period of April 1, 2000 through March 31, 2001. The meeting was open to the public. The major topics of the meeting were the NRC's Reactor Oversight Process assessment program, the results of the Quad Cities Nuclear Station assessment, and the NRC's Agency Action Matrix. Attendees included Quad Cities Station site management, members of the plant staff, a representative from the Illinois Department of Nuclear Safety, and local news media.

## PARTIAL LIST OF PERSONS CONTACTED

### Licensee

T. Tulon, Site Vice President  
G. Barnes, Plant Manager  
D. Barker, Radiation Protection Manager\*\*  
W. Beck, Regulatory Assurance Manager  
G. Boerschig, Engineering Manager  
R. Chrzanowski, Nuclear Oversight Manager  
D. Cook, Acting Maintenance Director  
R. Detwiler, Operations Support Manager  
K. Ohr, Radiation Protection Supervisor\*

### NRC

M. Ring, Chief, Projects Branch 1

\*Attended July 13, 2001 meeting.

\*\*Attended July 13 and August 14, 2001 meetings.

## ITEMS OPENED, CLOSED, AND DISCUSSED

### Opened

50-265/01-12-01	VIO	Failure to Accurately Report Performance Indicator Information
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### Closed

50-254/2000-006-00	LER	Main Steam Isolation Valve Leak Rate Test Results in Excess of Technical Specification Limits due to Component Wear.
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## LIST OF ACRONYMS AND INITIALISMS USED

ARM	Area Radiation Monitor
CAM	Continuous Air Monitor
CFR	Code of Federal Regulations
EDG	Emergency Diesel Generator
ENS	Event Notification System
EP	Emergency Preparedness
IE	Inspection and Enforcement
NARS	Nuclear Accident Reporting System
NPDES	National Pollutant Discharge Elimination System
ODCM	Offsite Dose Calculation Manual
TIP	Transverse Incore Probe
UFSAR	Updated Final Safety Analysis Report

## LIST OF DOCUMENTS REVIEWED

### 2OS1 Access Control

RWP 012014	U2 Recirc Pumps: Remove/Replace	March 20, 2001
RWP 011014	U1 Recirc Pumps: Remove/Replace	April 30, 2001
RWP 04007487	AOVA 0-2007013: Disassemble/Reassemble	July 10, 2001
RWP 04007487	Radwaste Valve Alley Survey Sheet	July 10, 2001

### 2OS3 Radiation Monitoring Instrumentation

QCIS 1700-07	U1 Reactor Building Ventilation & Fuel Pool Radiation Monitor Calibration	May 30, 2001
QCIS 1700-07	U2 Reactor Building Ventilation & Fuel Pool Radiation Monitor Calibration	May 31, 2001
QCIS 1700-07	Reactor Building Refueling Floor Low Range Radiation Monitor Calibration	May 7, 2001
QCIS 1700-07	Torus Area Radiation Monitor Calibration	December 27, 2000
QCIS 1700-07	EOP Radiation Monitor Calibration	August 11, 2000
QCCP 1200-04	Continuous Air Monitor Dry Well 1	August 4, 2000
QCCP 1200-04	Continuous Air Monitor Dry Well 2	August 8, 2000
QCCP 1200-04	Continuous Air Monitor Reactor Bldg 1	August 8, 2000
QCCP 1200-04	Continuous Air Monitor Reactor Bldg 2	August 4, 2000
QCCP 1200-04	Continuous Air Monitor OGFB	August 4, 2000
QCCP 1200-04	Continuous Air Monitor Turbine Bldg 1	August 4, 2000
QCCP 0400-18	SPING 3/4 Calibration and Test Data	May 23, 2001
QCRP 5824-08	MGP Instrument Calibration	July 2, 2001
QCIS 2400-01	U1 Dry Well Radiation Monitor Calibration	September 20, 2000
QCIS 2400-02	U2 Dry Well Radiation Monitor Calibration	January 14, 2000
PM-7	Portal Monitor PM1 Calibration	May 11, 2001
PM-7	Portal Monitor PM2 Calibration	April 25, 2001

PM-7	Portal Monitor PM3 Calibration	May 2, 2001
PM-7	Portal Monitor PM5 Calibration	May 2, 2001
PM-7	Portal Monitor PM6 Calibration	May 2, 2001
SAM-9	Tool Monitor SAM2 Calibration	April 20, 2001
SAM-9	Tool Monitor SAM3 Calibration	April 2, 2001
SAM-9	Tool Monitor SAM5 Calibration	February 7, 2001
SAM-9	Tool Monitor SAM6 Calibration	June 14, 2001
IPM-8A	Portal Monitor I8004 Calibration	May 31, 2001
IPM-8D	Portal Monitor I8101 Calibration	May 2, 2001
IPM-8D	Portal Monitor I8102 Calibration	June 11, 2001
IPM-8D	Portal Monitor I8103 Calibration	May 18, 2001
FASTSCAN	Whole Body Counter Calibration	January 22, 2000
QCRP 5822-03	PRM-4/GM041 Calibration	June 18, 2001
QCRP 5822-03	PRM-4/GM043 Calibration	April 16, 2001
QCRP 5822-03	PRM-4/GM046 Calibration	June 21, 2001
QCRP 5822-03	PRM-4/GM048 Calibration	June 21, 2001
QCRP 5822-03	PRM-5-3/GM056 Calibration	April 16, 2001
QCRP 5822-03	PRM-5-3/GM062 Calibration	April 12, 2001
QCRP 5822-03	PRM-5-3/GM063 Calibration	March 1, 2001
ASP-1	Rem Ball AL 1238 Calibration	February 19, 2001
RP-AA-103	RSO 50E Calibration DR4000	June 4, 2001
RP-AA-103	RSO 50E Calibration DR4001	June 8, 2001
RP-AA-103	RSO 50E Calibration DR4002	May 29, 2001
RP-AA-103	RSO 50E Calibration DR4003	May 7, 2001
RP-AA-103	RSO 50E Calibration DR4004	May 4, 2001
RP-AA-103	RSO 50E Calibration DR4005	January 22, 2001
RP-AA-103	RSO 50E Calibration DR4006	July 2, 2001
QCRP 5822-10	The Eberline PM-7 Portal Monitor	

QCRP-5822-07	Operation and Calibration of the IPM Whole Body Counter	May 28, 1998
CY-QC-130-402	SPING 3/4 Calibration	
Q2001-02142	Dose Rates in 2A RHR Room Subgrating	July 9, 2001
Q2001-02135	Unplanned Spread of Contamination	July 9, 2001
Q2001-00554	EHC Motor Found to be Contaminated at Trackway #1	February 20, 2001
Q2001-00645	Untagged Contaminated Material Inside RPA	February 28, 2001
Q2001-00775	Dose Rates on 1A RHR Hear Exchanger	March 12, 2001
Q2001-00836	Contaminated Smears Found in Clean Areas of LTV Building	March 16, 2001
Q2001-00966	Improper Radiation/Contamination Control Practices	March 29, 2001
Q2001-02057	RP Self-Assessment of RP Instrumentation	June 29, 2001
	Radiation Protection Department Focus Area Self-Assessment: Radiation Monitoring Instrumentation	July 3, 2001
QCRP 5510-21	MSA SCBA Monthly Inspection sheets	December 2000
QCRP 5510-21	MSA SCBA Post-Use/Post-Maintenance sheets	December 2000
QCRP 5510-21,	Maintenance and Inspection of the MSA Self-Contained Breathing Apparatus (SCBA)	

2PS3 Radiological Environmental Monitoring Program

Q2001-01970	Radiological Environmental Monitoring Program Issues	June 22, 2001
	Vendor Failing to Receive REMP Samples	May 30, 2001
	Nuclear Oversight Observations	May 15-16, 2001
	Self-Assessment, REMP	July 3, 2001
	Sample Collection Data Sheets	December 22, 2000
	TLD Check-Off Sheets	December 22, 2000
	Weekly Air Sampler TLDs, Monthly Visual Check, Air Sampler and all Other TLDs	December 22, 2000 - June 15, 2001

	Quarterly Exchange Air Sampler TLD and All Other TLDs	December 22, 2000 - June 15, 2001
	Pump Field Checks	December 22, 2000
	REMP Update Form, Missing Samples and Sampling Anomalies	December, 2000- June, 2001
	Pump Status Review Log Sheets	January 11, 2001
	Pump Maintenance Logs	December, 2000
	Quarterly Collection Schedules	First, Second, and Third Quarters, 2001
	Fish Collection, Upstream and Downstream	May 23, 2001
	Respiratory Qualification Report	July 9, 2001
	Monthly Reports on the Meteorological Monitoring Program	January 2001 to April 2001
	Environmental LLD Determination	June 8, 2001
	Unconditional Release Surveys	
	ICN Worldwide Dosimetry Service letter, Dosimetry Environmental Report	April 17, 2001
	Environmental, Inc. Report, Appendix A, "Interlaboratory Comparison Program Results"	January 2000 through December 2000
	Sampling Procedures Manual, Teledyne Midwest Laboratory	August 8, 1999
SVP-01-050	Annual Radiological Environmental Monitoring Report	May 1, 2001