December 11, 2001

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

SUBJECT: BYRON STATION, UNITS 1 AND 2
INSPECTION REPORT 50-454/01-14(DRP); 50-455/01-14(DRP)

Dear Mr. Kingsley:

On November 12, 2001, the NRC completed an inspection at the Byron Station, Units 1 and 2. The enclosed report documents the inspection findings which were discussed on November 15, 2001, with Mr. R. Lopriore and other members of your staff.

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

Based on the results of this inspection, the NRC identified one additional example which supports a previously identified significant cross-cutting issue in the area of operator human performance. This adverse performance trend was originally characterized as a "No Color" finding and was documented in NRC Inspection Report 50-454/455-01-10(DRP).

In addition, one issue of very low risk significance (Green) was self-revealed. The issue was determined to involve a violation of NRC requirements. However, because of its very low safety significance and because it was entered into your corrective action program, the NRC is treating the issue as Non-Cited Violation in accordance with Section VI.A.1 of the NRC's Enforcement Policy. If you contest the Non-Cited Violation, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington, DC 20555-0001, with copies to the Regional Administrator, Region III; Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Byron Station.

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).

We will gladly discuss any questions you have concerning this inspection.

Sincerely,

Original signed by
Ann Marie Stone

Ann Marie Stone, Chief
Branch 3
Division of Reactor Projects

Docket Nos. 50-454; 50-455
License Nos. NPF-37; NPF-66

Enclosure: Inspection Report 50-454/01-14(DRP);
50-455/01-14(DRP)

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REGION III

Docket Nos:	50-454; 50-455
License Nos:	NPF-37; NPF-66
Report No:	50-454/01-14(DRP); 50-455/01-14(DRP)
Licensee:	Exelon Generation Company, LLC
Facility:	Byron Station, Units 1 and 2
Location:	4450 N. German Church Road Byron, IL 61010
Dates:	October 1 through November 12, 2001
Inspectors:	R. Skokowski, Senior Resident Inspector B. Kemker, Resident Inspector C. Phillips, Braidwood Senior Resident Inspector N. Shah, Braidwood Resident Inspector T. Tongue, Project Engineer H. Peterson, Senior Operations Engineer R. Alexander, Radiation Specialist R. Winter, Reactor Engineer S. Sheldon, Reactor Engineer C. Thompson, Illinois Department of Nuclear Safety
Approved by:	Ann Marie Stone, Chief Branch 3 Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000454-01-14(DRP), IR 05000455-01-14(DRP), on 10/01-11/12/2001; Exelon Generation Company, LLC; Byron Station, Units 1 & 2. Personnel Performance During Non-routine Plant Evolutions and Cross-cutting issues.

The baseline inspection was conducted by resident and region based inspectors. The inspectors identified one Green finding associated with a Non-Cited Violation and an example of a previous No Color finding. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter 0609, "Significance Determination Process" (SDP). 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. Findings for which the SDP does not apply are indicated by "No Color" or by the severity level of the applicable violation.

A. Inspector Identified Findings

Cornerstone: Barrier Integrity

Green. A Non-Cited Violation of Technical Specification 3.6.3 for the operators' failure to isolate two inoperable containment penetrations was self-revealed. Operators incorrectly used a Unit 2 train "A" process sampling outboard isolation valve as an out-of-service isolation boundary for the Unit 2 train "B" process sampling line resulting in two inoperable containment penetrations.

The inspectors determined that this issue had a credible impact on safety because the licensee failed to have the containment penetrations isolated as required by the Technical Specification and the valves were not capable of fulfilling their design safety function. The inspectors concluded that this issue could have affected the integrity of the reactor containment; however, because the valves were not called upon to fulfill their safety function and the small diameter penetrations would be a very small leakage path, this issue was of very low safety significance. Because this finding is of very low safety significance and it was captured in the licensee's corrective action program, this finding is being treated as a Non-Cited Violation consistent with Section VI.A.1 of the NRC Enforcement Policy (Section 1R14).

Cross-cutting Issues: Human Performance

No Color. In inspection report 50-454/455-01-10, the inspectors documented an adverse performance trend which constituted a significant cross-cutting issue associated with operator human performance errors in the initiating events, mitigating systems, and barrier integrity cornerstones (No Color Finding 50-454/455-01-10-02). During this inspection period, the inspectors identified an additional example of this performance trend. The latest operator errors resulted in the inoperability of components designed to provide barrier integrity and resulted in a violation of Technical Specification requirements."

While the risk significance associated with this event was very low, the number of operator human performance related incidents indicated an adverse performance trend which constitutes a significant cross-cutting issue (Section 4OA4).

Report Details

Summary of Plant Status

The licensee operated Unit 1 and Unit 2 at or near full power for the duration of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather (71111.01)

a. Inspection Scope

The inspectors evaluated the licensee's preparations for adverse weather conditions during the winter months (i.e., below freezing temperatures and accumulation of ice and snow), which could potentially lead to a loss of offsite power or a loss of mitigating systems. The inspectors walked down the ultimate heat sink, condensate storage tanks, and other areas of the station potentially affected by cold weather to inspect insulated and trace heated piping and components, operation of area space heaters, and closure of outside air dampers. The inspectors selected the ultimate heat sink and condensate storage tanks because they were identified as risk significant in the licensee's risk analysis. The inspectors interviewed operations department personnel and reviewed applicable portions of the Updated Final Safety Analysis Report (UFSAR) and other selected documents. The documents listed at the end of this report were also used by the inspectors to evaluate this area.

In addition, the inspectors reviewed the issues that the licensee entered into its corrective action program to verify that identified problems were being entered into the program with the appropriate characterization and significance. The inspectors also reviewed the licensee's corrective actions for cold weather related issues documented in selected condition reports.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

a. Inspection Scope

The inspectors verified the system alignment of the equipment listed below during maintenance activities affecting the availability of associated redundant equipment:

- 1B Containment Spray System Train, and
- 2A Essential Service Water (SX) System Train.

These safety related systems were selected because they were designed to mitigate the consequences of a potential accident. The inspectors performed a walkdown of the accessible portions of the systems and verified that the system lineup was in accordance with plant operating procedures and applicable system drawings. The inspectors also assessed the material condition of system equipment and verified that identified discrepancies were properly captured in the licensee's corrective maintenance program. The documents listed at the end of this report were also used by the inspectors to evaluate this area.

In addition, the inspectors reviewed the issues that the licensee entered into its corrective action program to verify that identified problems were being entered into the program with the appropriate characterization and significance. The inspectors also reviewed the licensee's corrective actions for equipment alignment related issues documented in selected condition reports.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

a. Inspection Scope

The inspectors examined the plant areas listed below to observe conditions related to fire protection:

- 2B Centrifugal Charging Pump Room (Zone 11.3G-2),
- 2B Safety Injection Pump Room (Zone 11.3F-2), and
- 2B Residual Heat Removal Pump Room (Zone 11.2D-2).

These areas were selected for inspection because risk significant systems, structures and components were located in the areas. The inspectors reviewed applicable portions of the Byron Station Fire Protection Report and assessed the licensee's control of transient combustibles and ignition sources, material condition, and operational status of fire barriers and fire protection equipment. The documents listed at the end of this report were also used by the inspectors to evaluate this area.

In addition, the inspectors reviewed the issues that the licensee entered into its corrective action program to verify that identified problems were being entered into the program with the appropriate characterization and significance. The inspectors also reviewed the licensee's corrective actions for fire protection related issues documented in selected condition reports.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification (71111.11)

a. Inspection Scope

The inspectors reviewed the pass/fail results of individual written tests, operating tests, and simulator operating tests (required to be given per 10 CFR 55.59(a)(2)) administered by the licensee during calender year 2001.

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation (71111.12)

a. Inspection Scope

The inspectors evaluated the licensee's implementation of the maintenance rule, 10 CFR 50.65, as it pertained to identified performance problems with the following equipment and systems:

- Steam Generator Power Operated Relief Valves, and
- Normal and Alternate Feedwater to the Steam Generators.

During this inspection, the inspectors evaluated the licensee's monitoring and trending of performance data, verified that performance criteria were established commensurate with safety, and verified that equipment failures were appropriately evaluated in accordance with the maintenance rule. The documents listed at the end of this report were also used by the inspectors to evaluate this area. The inspectors interviewed system engineers and the station's maintenance rule coordinator.

In addition, the inspectors reviewed the issues that the licensee entered into its corrective action program to verify that identified problems were being entered into the program with the appropriate characterization and significance. The inspectors also reviewed the licensee's corrective actions for maintenance rule related issues documented in selected condition reports.

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 maintenance activities on the following equipment:

- Unit 1 Main Turbine Generator,
- 2A SX System Train, and
- 2B Diesel Generator (DG).

The inspectors selected these maintenance activities because they involved systems which were risk significant in the licensee's risk analysis. The maintenance activity associated with the Unit 1 main turbine generator was considered emergent work to correct a ground on the generator exciter. The maintenance activity associated with the 2B DG was considered emergent work to address a slow start time identified during surveillance testing. During this inspection, the inspectors assessed the operability of redundant train equipment and verified that the licensee's planning of the maintenance activities minimized the length of time that the plant was subject to increased risk. The inspectors interviewed operations, engineering, maintenance, and work control department personnel. The documents listed at the end of this report were also used by the inspectors to evaluate this area.

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Non-routine Plant Evolutions (71111.14)

.1 Incorrect Technical Specification (TS) Action Condition Application for Process Sampling System Containment Isolation Valves (CIVs) Due to Human Performance Error

a. Inspection Scope

On August 17, 2001, operators incorrectly implemented an out-of-service for maintenance on a process sampling system CIV (2PS229B), which resulted in two process sampling system CIVs being inoperable with their respective flow paths unisolated for longer than the time allowed by the TS. This event was selected for review to evaluate the operator human performance errors that caused the event. The inspectors interviewed operations and engineering department personnel, and reviewed the licensee's prompt investigation, root cause evaluation, applicable procedures, and condition reports to understand the details of the event. Other documents listed at the end of this report were also used to evaluate this event.

b. Findings

A finding of very low safety significance (Green) was self-revealed. Operators incorrectly used a Unit 2 train "A" process sampling outboard isolation valve as an out-of-service isolation boundary for the Unit 2 train "B" process sampling line resulting in two inoperable containment penetrations. This finding was dispositioned as a Non-Cited Violation. In addition, an associated operator human performance cross-cutting issue is documented in Section 4OA4 of this report.

On August 17, 2001, while performing pre-planned maintenance on the Unit 2 train "B" process sampling outboard CIV (2PS229B), operators incorrectly used the Unit 2

train “A” process sampling outboard CIV (2PS229A) as an out-of-service isolation boundary for the affected containment penetration. In addition to being the wrong train, the valve selected was a “fail-open” valve and would not isolate the penetration upon being de-activated. As a result, the licensee failed to isolate the correct containment penetration for the 2B process sampling train and the containment penetration for the 2A process sampling train was also rendered inoperable. A work center supervisor identified the problem and the licensee corrected the lineup about 22 hours later.

The inspectors determined that this issue had a credible impact on safety because the licensee failed to have the containment penetrations isolated as required by the TS and the valves were not capable of fulfilling their design safety function. The inspectors concluded that this issue could have affected the integrity of the reactor containment; however, because the valves were not called upon to fulfill their safety function and the small diameter penetrations would be a very small leakage path, this issue was of very low safety significance (Green).

Technical Specification 3.6.3, Condition A, states, in part, that with one or more penetration flow paths with one containment isolation valve inoperable, the licensee is required to isolate the affected penetration flow path in 4 hours by the use of at least one closed and de-activated automatic or remote manual valve, closed manual valve, blind flange, or check valve with flow through the valve secured. In addition, TS 3.6.3, Condition E, requires the licensee to place the unit in Mode 3 in 6 hours and be in Mode 5 in 36 hours if the required action and completion time of Condition A are not met. Contrary to the above, on August 17, 2001, the licensee failed to isolate the train A and B process sampling systems in 4 hours and failed to be in Mode 3 in 6 hours and Mode 5 in 36 hours. However, because of the very low safety significance of the item and because the licensee had included this item in the corrective action program (Condition Report B2001-03541) this violation is being treated as a Non-Cited Violation (50-455-01-14-01(DRP)).

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors evaluated the licensee’s basis that the issues identified in the following operability evaluations and condition reports did not render the involved equipment inoperable or result in an unrecognized increase in plant risk:

- Operability Evaluation 01-013, “DG Lubrication System,” Revision 0;
- Operability Evaluation 01-014, “1A DG Ventilation Damper Controller Degraded,” Revision 0;
- Operability Evaluation 01-015, “Feedwater Regulating Valves May Have Over-torqued Body to Bonnet Studs,” Revision 0;
- Operability Evaluation 01-016, “2B Centrifugal Charging Pump Seal Leakage,” Revision 0;
- Condition Report 00076848, “Weld Leak on 1SI1081;” and
- Condition Report 00080014, “2B DG Inoperable, Limiting Condition for Operation Action Requirement, Slow Start Time.”

The inspectors interviewed operations, engineering, maintenance and regulatory assurance department personnel and reviewed applicable portions of the UFSAR and TS. The documents listed at the end of this report were also used by the inspectors to evaluate this area.

In addition, the inspectors reviewed the issues that the licensee entered into its corrective action program to verify that identified problems were being entered into the program with the appropriate characterization and significance. The inspectors also reviewed the licensee's corrective actions for issues potentially affecting the operability of structures, systems, and components that were documented in selected condition reports.

b. Findings

No findings of significance were identified.

1R16 Operator Work-Arounds (71111.16)

a. Inspection Scope

The inspectors evaluated the operator work-arounds (OWAs) listed below to identify any potential affect on the functionality of mitigating systems or on the operators' response to initiating events:

- OWA 256 Erratic Operation of Unit 1 SG Blowdown Condenser Hotwell Pumps, and
- OWA 266 Diesel Oil Storage Tank Overfilling.

The inspectors selected OWA 256 to review because operation of the Unit 1 SG blowdown system has been complicated by erratic flow control and requires periodic venting by the operators. The inspectors selected OWA 266 to review a recurring problem with overfilling the diesel oil storage tanks. The inspectors interviewed operating and engineering department personnel and reviewed selected procedures and documents listed at the end of this report.

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors evaluated the licensee's post maintenance testing activities for maintenance conducted on the following equipment:

- 2A SX System Train.

The inspectors selected this post maintenance activity because the SX system was identified as risk significant in the licensee's risk analysis. The inspectors reviewed the scope of the work performed and evaluated the adequacy of the specified post maintenance testing. The inspectors verified that the post maintenance testing was performed in accordance with approved procedures, that the procedures clearly stated acceptance criteria, and that the acceptance criteria were met. The inspectors also verified that weld repair work was completed in accordance with the applicable American Society of Mechanical Engineers (ASME) code requirements. During this inspection activity, the inspectors interviewed maintenance and engineering department personnel and reviewed the completed post maintenance testing documentation. The documents listed at the end of this report were also used by the inspectors to evaluate this area.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors evaluated the surveillance testing activities listed below to verify that the testing demonstrated that the equipment was capable of performing its intended function:

- Unit 1 Train A ASME Surveillance Requirements for Component Cooling Water Pump 1A,
- Unit 1 Train B SX Pump and Discharge Check Valve Surveillance Test, and
- Unit 2 Train B ASME Surveillance Requirement for Diesel Driven Auxiliary Feedwater Pump 2B.

The inspectors selected these surveillance test activities because the system functions were identified as risk significant in the licensee's risk assessment and the components were credited as operable in the licensee's safety analysis to mitigate the consequences of a potential accident. The inspectors interviewed operations, maintenance, and engineering department personnel, reviewed the completed test documentation, and observed the performance of all or portions of these surveillance testing activities. The documents listed at the end of this report were also used by the inspectors to evaluate this area.

In addition, the inspectors reviewed the issues that the licensee entered into its corrective action program to verify that identified problems were being entered into the program with the appropriate characterization and significance. The inspectors also reviewed the licensee's corrective actions for surveillance testing issues documented in selected condition reports.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed the temporary modifications listed below to verify that the installations were consistent with applicable design modification documents and that the modifications did not adversely impact system operability or availability.

- Design Change Procedure 9901051, "Installation of a Plugging Device at the Inlet of the 1C Low Pressure Turbine #7 Bearing Housing Drain and the Installation of a Cap at the Outlet of the Drain," and
- Engineering Change 333401, "Temporary Modification to Lower the 1A DG Room Ventilation System Temperature Control Setpoint."

The inspectors verified that configuration control of the modifications were correct by reviewing design modification documents and confirmed that appropriate post-installation testing was accomplished. The inspectors interviewed operations, engineering, and maintenance department personnel and reviewed the design modification documents and the 10 CFR 50.59 evaluations against the applicable portions of the UFSAR. The documents listed at the end of this report were also used by the inspectors to evaluate this area.

Additionally, the inspectors reviewed the issues that the licensee entered into its corrective action program to verify that identified problems were being entered into the program with the appropriate characterization and significance. The inspectors also reviewed the licensee's corrective actions for issues related to the installation of temporary modifications documented in selected condition reports.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS1 Access Control to Radiologically Significant Areas (71121.01)

.1 Plant Walkdowns and Radiological Boundary Verifications

a. Inspection Scope

The regional radiation protection inspector conducted walkdowns of the radiologically posted area (RPA) to verify the adequacy of radiological boundaries and postings. Specifically, the inspector walked down several radiation and high radiation area boundaries in the auxiliary and radwaste buildings. Confirmatory radiation measurements were taken to verify that these areas were properly posted and controlled in accordance with 10 CFR Part 20, licensee procedures, and the TS. The

radiation work permit for general tours was reviewed for electronic dosimeter alarm set points and protective clothing requirements.

b. Findings

No findings of significance were identified.

Cornerstone: Public Radiation Safety

2PS3 Radiological Environmental Monitoring Programs (71122.03)

.1 Review of Environmental Monitoring Reports and Data

a. Inspection Scope

The regional radiation protection inspector reviewed the 2000 Annual Radiological Environmental Operating Report to assess sampling location commitments, monitoring and measurement frequencies, land use census, the vendor laboratory's inter-laboratory comparison program, and data analysis. Anomalous results (including inconsistent sample results, missed samples, or inoperable equipment) were evaluated. The review of the radiological environmental monitoring program (REMP) was conducted to verify that the REMP was implemented as required by the Offsite Dose Calculation Manual (ODCM), the TS, and the Technical Requirements Manual (TRM) and that changes, if any, did not affect the licensee's ability to monitor the impacts of radioactive effluent releases on the environment. Additionally, the most recent corporate audit of the licensee's REMP 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 regional radiation protection inspector accompanied the REMP vendor representative during his weekly sample collection surveillance for the 8 environmental air sampling stations and for 16 of the 40 environmental thermoluminescent dosimeters to verify that their locations were consistent with their descriptions in the ODCM and to evaluate the material condition of these stations.

The meteorological monitoring site was observed to validate that sensors were adequately positioned and operable. The inspector reviewed the 2000 Annual Radiological Environmental Operating Report and a sampling of monthly reports provided by the meteorological services vendor to evaluate the onsite meteorological monitoring program's data recovery rates, routine calibration and maintenance activities,

and non-scheduled maintenance activities. The review was conducted to verify that the meteorological instrumentation was operable, calibrated, and maintained in accordance with licensee procedures. The inspector also verified that indications of wind speed, wind direction, and atmospheric stability measurements were available in the control room and that the instrumentation was operable.

b. Findings

No findings of significance were identified.

.3 Review of Environmental Sample Collection and Analysis

a. Inspection Scope

The regional radiation protection inspector observed the collection and preparation of particulate and activated charcoal air filters to verify that representative samples were collected in accordance with vendor procedures and the ODCM. The inspector observed the technician perform air sampler field tests to verify that the air samplers were functioning in accordance with vendor and licensee procedures. Calibration and maintenance records (January 2000 through October 2001) for the eight air sampling stations were reviewed to verify that the equipment was being maintained as required. Additionally, the inspector observed the collection of surface water samples from the Rock River (upstream and downstream of the effluent discharge point) and the collection and preservation of two sets of milk samples to assess the licensee's compliance with ODCM and TRM requirements. The environmental sample collection program was compared with the ODCM to verify that samples were representative of the licensee's release pathways. Additionally, the inspector reviewed results of the vendor laboratory's inter-laboratory comparison program to verify that the vendor was capable of adequately preparing and analyzing environmental samples for a variety of radioisotopes.

b. Findings

No findings of significance were identified.

.4 Unrestricted Release of Material from the Radiologically Controlled Area

a. Inspection Scope

The regional radiation protection inspector evaluated the licensee's controls, procedures, and practices for the unrestricted release of material from radiologically controlled areas to verify 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 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. In particular, the inspector reviewed and observed the

implementation of the controls used in the release of materials via the radwaste truck bay doors and at the RPA egress point in the auxiliary building (401 foot elevation).

b. Findings

No findings of significance were identified.

.5 Identification and Resolution of Problems

a. Inspection Scope

The regional radiation protection inspector reviewed: (1) the results of focus area self-assessments of the REMP and the radioactive material control program completed by the site radiation protection staff and corporate staff during calendar year 2001; (2) Nuclear Oversight Continuous Assessment report and field observations of the radiation protection program completed in calendar year 2001, as they relate to the REMP and radioactive material control program; and (3) the licensee's condition report database and numerous individual condition reports related to the REMP and radioactive material control program generated in calendar years 2000 and 2001. The inspector evaluated the effectiveness of these processes to identify, characterize, and prioritize problems and to develop and implement corrective actions.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES (OA)

4OA1 Performance Indicator Verification (71151)

.1 Reactor Coolant System (RCS) Specific Activity Performance Indicator Verification

a. Inspection Scope

The regional radiation protection inspector reviewed the licensee's assessment of its performance indicator for RCS specific activity by reviewing chemistry department records and selected isotopic analyses (July 2000 through June 2001) to verify that the greatest dose equivalent iodine (DEI) value obtained during those months corresponded with the value reported to the NRC. The inspector also reviewed selected DEI calculations to verify that the appropriate conversion factors were used in the assessment as required by the TS. Additionally, on October 17, 2001, the inspector observed a chemistry technician obtain and analyze a reactor coolant sample for DEI to verify adherence with licensee procedures for the collection and analysis of RCS samples.

b. Findings

No findings of significance were identified.

.2 RCS Specific Leakage Performance Indicator Verification

a. Inspection Scope

The resident inspectors verified the RCS Leakage performance indicator for both units. The inspectors reviewed the results of each reactor coolant system water inventory balance from October 2000 through September 2001, determined the maximum monthly value of identified leakage for each unit, and verified the licensee's calculation of the performance indicator values.

b. Findings

No findings of significance were identified.

.3 Public Radiation Safety Performance Indicator Verification

a. Inspection Scope

The regional radiation protection inspector reviewed the licensee's assessment of its performance indicator for public radiation safety by reviewing the offsite dose calculations related to both liquid and gaseous effluent releases from the station from July 2000 through June 2001 to determine if this data was adequately assessed and reported. Since no reportable events were identified by the licensee for the 3rd and 4th quarters of calendar year 2000 and for the 1st and 2nd quarters of calendar year 2001, the inspector compared the licensee's data with the condition report database for these time periods to verify that there were no unaccounted for occurrences in the performance indicator values.

b. Findings

No findings of significance were identified.

4OA3 Event Followup

.1 (Closed) Licensee Event Report (LER) 50-455-2001-003-00: "Improper TS Action Condition Application for Process Sampling CIV Due to Human Performance Error." This event is discussed in Section 1R14 of this report. In addition, this issue was identified as a significant cross-cutting issue as discussed in Section 4OA4 of this report. This LER is closed.

4OA4 Cross-cutting Issues

a. Inspection Scope

The inspectors previously identified an adverse performance trend developing in several cornerstone areas with operator errors being the common element and documented the issue as a No Color Finding in NRC Inspection Report 50-454/455-01-10(DRP). Specifically, the inspectors had noted multiple errors that resulted from operators failing to follow station procedures and/or operators making incorrect knowledge-based

decisions. The inspectors evaluated the operator human performance issue described in Section 1R14 of this report to determine if this substantive cross-cutting issue was continuing.

b. Findings

The inspectors concluded that the operator errors that caused the event described in Section 1R14 of this report resulted from a lack of procedural compliance and/or incorrect knowledge-based decisions by operators. This finding had or could have had a direct impact on safety by affecting the reliability, operability and functionality of equipment associated with barrier integrity. This event is considered an additional example of the previously identified adverse operator human performance trend, which was considered a substantive cross-cutting issue and a "No Color" finding (50-454/455-01-10-02(DRP)).

4OA6 Meetings

.1 Interim Exits

The results of the Public Radiation Safety Inspection was presented to Mr. R. Lopriore and other members of licensee management at the conclusion of the inspection on October 19, 2001. The licensee acknowledged the findings presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

The results of the Licensed Operator Requalification Testing Inspection was presented to Mr. J. Heaton and other members of licensee management at the conclusion of the inspection on October 25, 2001. The licensee acknowledged the findings presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

.2 Resident Inspector Exit Meeting

The inspectors presented the inspection results to Mr. R. Lopriore and other members of licensee management at the conclusion of the inspection on November 15, 2001. The licensee acknowledged the findings presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

KEY POINTS OF CONTACT

Licensee

B. Altman, Maintenance Manager
R. Blaine, Radiation Protection Director
D. Combs, Site Security Manager
D. Drawbaugh, Regulatory Assurance
B. Grundmann, Regulatory Assurance Manager
K. Hansing, Site Nuclear Oversight Manager
J. Heaton, Lead License Requalification Specialist
M. Heinzer, Nuclear Oversight Assessment Manager
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W. Kolo, Work Management Director
R. Krohn, Security Analyst
J. Kuczynski, Radiation Protection Technical Support Supervisor
S. Kuczynski, Station Manager
J. Langan, Regulatory Assurance
R. Lopriore, Site Vice President
D. Palmer, Radiation Protection Engineering Supervisor
T. Roberts, Engineering Director
B. Sambito, Radiation Protection Field Supervisor
T. Schuster, Executive Assistant
D. Spoerry, Training Manager
S. Stimac, Shift Operations Superintendent
D. Thompson, Radiation Protection Dose Assessment Health Physicist
W. Walter, Online Work Control Superintendent

Nuclear Regulatory Commission

M. Holmberg, Reactor Engineer, Division of Reactor Safety
S. Reynolds, Deputy Division Director, Division of Reactor Projects
A. Stone, Chief, Projects Branch 3, Division of Reactor Projects

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-455-01-14-01	NCV	Operator Errors Result in Violation of Containment Isolation Valve Technical Specification

Closed

50-455-01-14-01	NCV	Operator Errors Result in Violation of Containment Isolation Valve Technical Specification
50-455-2001-003-00	LER	Improper Technical Specification Action Condition Application for Process Sampling Containment Isolation Valve Due to Human Performance Error

Discussed

50-454/455-01-10-02	FIN	Adverse Trend in Operator Human Performance

LIST OF ACRONYMS USED

AF	Auxiliary Feedwater
AR	Action Request
ASME	American Society of Mechanical Engineers
BAP	Byron Administrative Procedure
BAR	Byron Annunciator Response Procedure
BOP	Byron Operating Procedure
BOSR	Byron Operating Surveillance Requirement Procedure
BVSR	Byron Technical Surveillance Requirement Procedure
CFR	Code of Federal Regulations
CIV	Containment Isolation Valve
CR	Condition Report
DEI	Dose Equivalent Iodine
DG	Diesel Generator
DRP	Division of Reactor Projects
ESF	Engineered Safety Features
FW	Feedwater
LCOAR	Limiting Condition for Operation Action Requirement
LER	Licensee Event Report
MS	Main Steam
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
NSP	Nuclear Station Procedure
NUPIC	Nuclear Utilities Procurement Issues Committee
ODCM	Offsite Dose Calculation Manual
OWA	Operator Work-Around
PARS	Publically Available Records
PORV	Power Operated Relief Valve
RCS	Reactor Coolant System
REMP	Radiological Environmental Monitoring Program
RETS	Radiological Effluent Technical Specifications
RPA	Radiologically Posted Area
SDP	Significance Determination Process
SG	Steam Generator
SX	Essential Service Water
TRM	Technical Requirements Manual
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
WR	Work Request

LIST OF DOCUMENTS REVIEWED

1R01 Adverse Weather

	Byron/Braidwood Stations Updated Final Safety Analysis Report (UFSAR)	
Byron Operating Procedure (BOP) CW-25	Natural Draft Cooling Tower Operation	Revision 8
BOP SX-T2	SX [Essential Service Water] Tower Operation Guidelines	Revision 8
BOP XFT-1	Cold Weather Operations	Revision 0
Unit 0 Byron Operating Surveillance Requirement Procedure (BOSR) XFT-A1	Freezing Temperature Equipment Protection Station Heating and Department Support Requirements	Revision 6
0BOSR XFT-A2	Freezing Temperature Equipment Protection Auxiliary Steam Boilers	Revision 0
0BOSR XFT-A3	Freezing Temperature Equipment Protection Plant Ventilation Systems	Revision 0
0BOSR XFT-A4	Freezing Temperature Equipment Protection Protected Area Buildings Ventilation Systems and Tanks	Revision 0
0BOSR XFT-A5	Freezing Temperature Equipment Protection Non-Protected Area Buildings Ventilation Systems	Revision 0
Focus Area Self Assessment Report	Adverse Weather Preparations (Cold Weather)	October 1, 2001 through October 19, 2001
Condition Report (CR) B2000-03221	Heat Trace for Unit 1 Condensate Storage Tank Not Functioning	October 26, 2000
CR B2000-03329	Freezing Temperature Equipment Protection	November 6, 2000
CR B2000-03382	Deficiencies in Implementation of Cold Weather Protection Corrective Actions	November 9, 2000
CR B2000-03384	Nuclear Oversight Identified Cold Weather Procedure Enhancements	November 10, 2000

CR B2000-03470	Winterization of Radwaste Volume Reduction Outer Truck Bay	November 22, 2000
CR B2000-03997	Missing Sewage Treatment Sludge Records	January 2, 2001
CR B2000-03998	Failure of Cooling Water Fill Leads to Unit 1 Power Reduction	January 2, 2001
CR B2001-00072	Large Section of Unit 2 Natural Draft Cooling Tower Fill Plugs Outfall Screens	January 8, 2001
CR B2001-00104	Blowdown Valve Packing Leak Resulting in Component Icing	January 9, 2001
CR B2001-00750	Unit 1 Division 12 Miscellaneous Electrical Equipment Room Temperature Cold	February 17, 2001
CR 00079258	Winter Readiness Focused Area Self Assessment Issues	October 17, 2001
CR 00079466	Deficiencies in 0BOSR XHT-A1, Lack of Required Predefines	October 19, 2001
CR 00081671	Corrective Actions for Cold Weather Operations Not Completed	November 5, 2001

1R04 Equipment Alignment

	Byron Station Technical Specifications (TS)	
	Byron/Braidwood Stations UFSAR	
BOP CS-E1B	Unit 1 Containment Spray System Train “B” Electrical Lineup	Revision 1
BOP CS-M1B	Containment Spray System Train “B” Valve Lineup	Revision 1
BOP CS-M1C	Containment Spray System Train “C” Valve Lineup	Revision 2
CR B2000-03447	1CV8392 B Not Returned to As-found Position Following Maintenance	October 9, 2000
CR B2001-01086	1FW032 Found Closed When Required to Be Opened	March 13, 2001

1R05 Fire Protection

	Byron/Braidwood Stations Fire Protection Report	Revision 19
	Byron Station Pre-Fire Plans and Drawings	
Byron Administrative Procedure (BAP) 1100-17T1	Byron Station Pre-Fire Plan	Revision 0
BAP 1100-7	Fire Prevention for Transient Combustibles	Revision 10
BAP 1100-7A1	Minor Transient Combustibles	Revision 1
CR B2000-01725	Fire Brigade Self Contained Breathing Apparatus Masks Unavailable	June 17, 2000
CR B2000-03750	Inadequate Corrective Action	December 9, 2000

1R12 Maintenance Rule Implementation

Nuclear Station Procedure (NSP) ER-3010	Maintenance Rule	Revision 0
NUMARC 93-01	Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants	Revision 2
	Maintenance Rule Performance Monitoring Data for Criteria FW-1, Provide Normal and Alternate Feedwater (FW) to the Steam Generators	October 1, 1999 through August 31, 2001
	Maintenance Rule Performance Monitoring Data for Criteria MS-4, Power Operated Relief Valves (PORV) Steam Generator (SG) Atmospheric Pressure Control	October 1, 1999 through October 19, 2001
	Maintenance Rule (a)(1) Disposition Checklist and Documentation Summary for MS-4, Steam Generator Atmospheric Pressure Control and Isolation	October 19, 2001
	Maintenance Rule (a)(1) Disposition Checklist and Documentation Summary for FW1/PL1, Provide Normal and Alternate Feedwater to the Steam Generators/Plant Level Criteria	September 25, 2001

	Expert Panel Meeting Minutes	January 12, 2001
	Expert Panel Meeting Minutes	March 9, 2001
	Expert Panel Meeting Minutes	April 27, 2001
	Expert Panel Meeting Minutes	May 25, 2001
	Expert Panel Meeting Minutes	July 13, 2001
	Expert Panel Meeting Minutes	August 24, 2001
	Expert Panel Meeting Minutes	September 14, 2001
CR B2000-01204	1A Feedwater Pump Emergency Availability Lost	April 23, 2000
CR B2000-03201	1FW530 Failure to Modulate Feedwater Flow	October 21, 2000
CR B2000-03408	Unplanned LCOAR [Limiting Condition for Operation Action Requirement] Entry Due to Failure of 1MS019B to Properly Stroke	November 10, 2000
CR B2001-00374	Maintenance Rule Peer Group Containment Closure Industry Event Review	January 16, 2001
CR B2001-00603	Unplanned LCOAR Entry for 2MS018A	February 9, 2001
CR B2001-00629	2A SG PORV Manual/Automatic Station Failure Effect on Availability	February 9, 2001
CR B2001-00808	Unplanned Loss of 2A SG PORV Auto Capability	February 22, 2001
CR B2001-00915	Unexpected/Unplanned LCOAR Entry on Over-temperature Delta Temperature Loop	March 1, 2001
CR B2001-00924	Unplanned LCOAR Entry For Unit 1 Loop B Over-pressure Delta Temperature Channel	March 1, 2001
CR B2001-01297	2C MS [Main Steam] PORV Material Condition Following Maintenance	March 27, 2001
CR B2001-01587	2A SG Atmospheric Relief Failed to Stroke During 2BR09	April 11, 2001
CR B2001-01983	MS PORV Events	April 30, 2001
CR B2001-02696	Inadequate Post Maintenance Test Specified for 2C SG PORV	June 13, 2001

CR B2001-02856	Unit 2 Reactor Trip Due to 2FW540 Failed Close	June 26, 2001
CR B2001-03304	1D SG PORV, 1MS018D, Exceeds Administrative Stroke Time	July 26, 2001
CR B2001-03490	Unplanned LCOAR Entry on 1MS018D, 0BOL IST1 Due to Stroke Time Out of Administrative Limit	August 12, 2001
CR 00074404	1D MS PORV Ineffective Corrective Actions and Operability Documentation	July 26, 2001
CR 00074907	1FW510 Positioner Washer Missing Causes Derating to 25 Percent Power	September 11, 2001
CR 00076596	2A MS PORV Will Not Stroke With Manual Pump	September 26, 2001

1R13 Maintenance Risk Assessments and Emergent Work Evaluation

Byron Operating Department Policy No. 400-47	On-Line Risk/Protected Equipment	Revision 2
NSP WC-AA-103	On-Line Maintenance	Revision 3
1BOSR 8.1.2-1	Unit 1A DG Operability Monthly and Semi-Annual Surveillance	Revision 7
2BOSR 8.1.2-2	Unit 2B DG Operability Monthly and Semi-Annual Surveillance	Revision 6
Field Action Request 1-NBT-4931-276	Generator Exciter Ground Alarm	October 15, 2001
	Byron Unit 1 Troubleshooting Log Generator Exciter Ground Detection Circuit	Revision 1
	Byron Shift Manager's Log	October 23, 2001 through October 24, 2001
CR 00080017	Emergency DG Fast Starts Not Timed as Required by TS	October 23, 2001
CR 00003758	2B SX Pump Window	October 25, 2001

1R14 Personnel Performance During Non-routine Plant Evolutions

	Byron Station TS	
	Byron/Braidwood Stations UFSAR	
Licensee Event Report (LER) 50-455-2001-003-00	Improper Technical Specification Action Condition Application for Process Sampling Containment Isolation Valve Due to Human Performance Error	October 17, 2001
Prompt Investigation Report for CR B2001-003541	Incorrect Valve Deactivated and Isolated for LCOAR Required Action	August 18, 2001
Root Cause Report 00074328	Incorrect PS Valve Deactivated and Isolated for LCOAR Required Actions	August 28, 2001
Drawing M-140, Sheet 6	Diagram of Process Sampling - Post Accident Hydrogen Monitoring System	Revision P
	Byron Shift Manager's Log	August 17, 2001 through August 18, 2001
CR B2001-003541	Incorrect Valve Deactivated and Isolated for LCOAR Required Action	August 18, 2001

1R15 Operability Evaluations

	Byron Station TS	
	Byron/Braidwood Stations UFSAR	
NSP CC-3001	Operability Determination Process	Revision 0
NSP LS-AA-105-1000	Operability Determination Guidance Manual	Revision 0
NSP MA-AA-MM-6-00007	Torquing and Tightening of Bolted Connections	Revision 0
NRC Generic Letter 91-18	Information to Licensees Regarding NRC Inspection Manual Section on Resolution of Degraded and Nonconforming Conditions	Revision 1
NRC Inspection Manual, Part 9900	Operable/Operability: Ensuring the Functional Capability of a System or Component	October 8, 1997

Operability Evaluation 01-013	DG Lubrication System	Revision 0
Operability Evaluation 01-014	1A DG Ventilation Damper Controller Degraded	Revision 0
Operability Evaluation 01-015	Feedwater Regulating Valves May Have Over-torqued Body to Bonnet Studs	Revision 0
Operability Evaluation 01-016	2B Centrifugal Charging Pump Seal Leakage	Revision 0
50.59 Evaluation BRW-E-2001-311	Increase Engineered Safety Features (ESF) Equipment Recirculation Loop Leakage Outside Containment	Revision 0
Calculation BRW-01-0105-M/ BYR-01-046	ESF Recirculation Leakage Increase	Revision 0
Exelon Special Process Procedures Manual	Welding and Brazing	Revision 2
American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, Article IWA-4000	Repair Procedures	1989
	Emerson Process Management, Type SS-137 Reverse Acting Diaphragm Actuator Instruction Manual	April, 1994
Prompt Investigation for CR 00076849	Unplanned LCOAR 1BOL 3.0.3 due to both Trains of Unit 1 Safety Injection Out-of-Service for Repair of Weld Leak on 1SI1081 Vent Valve	September 28, 2001
CR B2001-00625	All Information on 1CC158 Not Conveyed in CR B2001-00281	February 9, 2001
CR B2001-00651	Technical Specification Bases B3.8.3 Is Incorrect	February 12, 2001
CR B2001-00687	Calculation Deficiency for Seismic Evaluation of Carbon Dioxide Storage Tank (0CO01T)	February 7, 2001
CR B2001-01195	Gang Box and Tool Box Parked on Flood Seal for 1SX001A	March 20, 2001

CR B2001-01401	Operating Experience 12076 - Gas Binding of High Head Safety Injection Pump Due to Accumulator Nitrogen Back-Leakage	April 3, 2001
CR B2001-02383	Revised Cycle-Specific Operability Determination Not Updated for New Cycle	May 21, 2001
CR B2001-02466	Abnormal Component Position Sheet Exceeds 6 Months Without 50.59	May 26, 2001
CR 00076264	2A DG Lower Lube Oil Cooler is Leaking	September 24, 2001
CR 00076848	Weld Leak on 1SI1081	September 27, 2001
CR 00077715	Feedwater Regulating Valves' Torque Values Appear to Be Incorrect	November 4, 2001
CR 00078480	1A DG Ventilation Fan Damper Controller Degraded	October 10, 2001
CR 00080014	2B DG Inoperable, LCOAR, Slow Start Time	October 23, 2001
CR 00080017	DG Fast Starts Not Timed as Required by Technical Specifications	October 23, 2001
CR 00081517	Seal Leak on 2B Centrifugal Charging Pump Inboard Seal	November 2, 2001

1R16 Operator Work-Arounds

NSP OP-AA-101-303	Operator Work-Around Program	Revision 0
BOP DO-7	Filling Unit 1 DG Storage Tanks	Revision 6
Operator Work-Around (OWA) 256	Erratic Operation of Unit 1 SG Blowdown Condenser Hotwell Pumps	
OWA 266	Diesel Oil Storage Tank Overfilling	

1R19 Post Maintenance Testing

	Byron/Braidwood Stations UFSAR	
Work Request (WR) 99207524	Open Strainer for System Engineering Inspection, Repair as Necessary	November 8, 2001
WR 99285126-01	Replace Drain Piping on 2A SX Pump Discharge Strainer	November 8, 2001

WR 99285126-02	Perform VT-2 Visual Inspection of 2A SX Pump Discharge Strainer Piping	November 9, 2001
BAP 1600-5A1	Repair/Replacement Examination and Testing Requirement Guidelines	Revision 4
Unit 2 Byron Technical Surveillance Requirement Procedure (BVSR) 4.f.2-11	Unit 2 Non-routine Visual Examination of ASME Class 1, 2 and 3 Components at Nominal Operating Pressure	Revision 3
NRC Regulatory Guide 1.147	Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1	Revision 12
ASME Boiler and Pressure Vessel Code Case N-416-1	Alternative Pressure Test Requirement for Welded Repairs or Installation of Replacement Items by Welding, Class 1, 2 and 3, Section XI, Division 1	February 15, 1994
ASME Boiler and Pressure Vessel Code, Section XI, Article IWA-5000	Rules for Inservice Inspection of Nuclear Power Plant Components, System Pressure Tests	1992 Edition, July 1, 1992
	Byron Shift Manager's Log	November 9, 2001

1R22 Surveillance Testing

	Byron Station TS	
	Byron/Braidwood Stations UFSAR	
Byron Letter 90-0016	Byron Station's Response to NRC Generic Letter 89-13, Service Water System Problems Affecting Safety-Related Equipment	January 3, 1990
1BVSR 5.5.8.CC.1-1	ASME Surveillance Requirements for Component Cooling Pump 1CC01PA	Revision 5
1BVSR 5.5.8.SX.1-2	Test of the 1B SX Pump and Discharge Check Valve	Revision 3
2BVSR 5.5.8.AF.1-2	ASME Surveillance Requirement for the Diesel Driven Auxiliary Feedwater (AF) Pump	Revision 6
WR 00337120	Work Item 2BVSR 5.5.8.AF.1-2, 2AF01PB 2B AF Pump ASME Surveillance	October 22, 2001

CR B2001-02382	Two Hour Reactor Trip Bypass Breaker Test Time Limit Exceeded	May 21, 2001
CR 00079863 [1]	Two Hour Run Time Requirement in Diesel-Driven AF ASME Surveillance	October 22, 2001

1R23 Temporary Modifications

NSP CC-AA-112	Temporary Configuration Changes	Revision 4
Design Change Procedure 9901051	Installation of a Plugging Device at the Inlet of the 1C Low Pressure Turbine #7 Bearing Housing Drain and the Installation of a Cap at the Outlet of the Drain	Revision 2
Engineering Change 333401	Temporary Modification to Lower the 1A DG Room Ventilation System Temperature Control Setpoint	Revision 0
BAP 1100-3A3	Pre-Evaluated Plant Barrier Matrix	Revision 7
BAP 1100-3	Plant Barrier Impairment Program	Revision 17
Byron Annunciator Response Procedure (BAR) 1-18-D2	Bearing Oil Pressure Low-Turbine Trip	Revision 3
BAR 1-18-D5	Bearing Oil Pressure Low	Revision 51
Unit 1 Byron Abnormal Operating Procedure SEC-3	Loss of Condenser Vacuum - Unit 1	Revision 100
WR 990243015-01	Door Not Latching, Fingers Not Extending Out of Latch Mechanism	December 20, 2000
WR 990269808-01	1C Low Pressure Turbine (#7 Bearing) Slop Drain, Cut Pipe Above Funnel	May 30, 2001
WR 00365905-01	Temporary Indicator is not Indicating	October 12, 2001
	1C Low Pressure Turbine Slop Drain Temporary Repair Action Plan	June 1, 2001
CR B2000-03554	U01A Dryer Control Card Shorted During Temporary Modification Installation	November 22, 2000
CR B2000-03873	Failure of Door 0DSSD171 Latching Mechanism Causes Multiple Barrier Concerns	December 19, 2000

CR B2000-03901	Use of Procedure Directed Temporary Modifications	December 21, 2000
CR B2001-01361	1C Feedwater Pump Thrust Bearing Wear Department Standing Order Expired	March 31, 2001
CR B2001-02012	Institute for Nuclear Power Operations Database Operational Experience Search Found Three Reactor Trips Due to Failed Slop Drains	May 1, 2001
CR 00080266 [1]	Unauthorized Temporary Modification Installed on Door 0DSSD171	December 19, 2000

2PS3 Radiological Environmental Monitoring and Radioactive Material Control Programs

NSP RP-AA-304	Unconditional Release Surveys	Revision 4
NSP RP-AA-500	Radioactive Material Control	Revision 2
NSP RP-AA-651	Station Responsibilities for Exelon Nuclear's Meteorological and REMP [Radiological Environmental Monitoring Program] Programs	Revision 2
Unit 0 Byron Radiological Protection Surveillance Requirement Procedure 3.c.2-1	Meteorological Instrumentation Calibration - Semi Annual	Revision 1
Exelon Audit SR-2001-341	Nuclear Utilities Procurement Issues Committee (NUPIC) Joint Quality Assurance Program Audit Report	July 27, 2001
Midwest Regional Operating Group Assessment 2001-020	Radioactive Material Control	June 21, 2001
Nuclear Oversight Assessment NOA-BY-01-2Q	Nuclear Oversight Continuous Assessment Report: Byron Nuclear Power Station	April 2001 through June 2001
Vendor Technical Manual TML-SPM-1	Sampling Procedures Manual: Teledyne Midwest Laboratory	Revision 4
	2000 Annual Radiological Environmental Operating Report	May 14, 2001

	Focus Area Self-Assessment: Radiological Environmental Monitoring and Offsite Dose Calculation Manual	September 26, 2001
	Monthly Report on the Meteorological Monitoring Program at the Byron Nuclear Station	August 2001
	Self-Assessment Report: Program Monitoring and Controls for Iron 55 and Other Difficult-to-Measure Radionuclides	January 4, 2000
Action Request (AR) 00047004	Byron Plant Support Field Observations for NOA-BY-01-2Q Assessment AR 46996	May 11, 2001 through July 12, 2001
CR B2000-01048	Poor Vendor Performance on 4th Quarter Effluent Samples	April 10, 2000
CR B2000-02232	Misplaced REMP Samples	July 25, 2000
CR B2001-02240	Power Uprate ODCM [Offsite Dose Calculation Manual] Required Revisions Not Performed (Power Uprate Team)	May 11, 2001
CR B2001-02557	Blue Tool Greater Than 20,000 Decades Per Minute Limit	June 4, 2001
CR B2001-02921	Enhancement Items Were Identified During Focus Area Self-Assessment	June 29, 2001
CR B2001-03496	Power to REMP Sample Location Cut	August 7, 2001
CR 00070440	System Engineering Supervisor Identifies Deficiencies During NUPIC Audit of Environmental, Inc.	August 2, 2001
CR 00073674	Radioactive Material Found Outside of the Radiological Protected Area	August 29, 2001
CR 00077631	Perform Comprehensive Review of REMP Tables Within ODCM	October 3, 2001
CR 00079159 [1]	REMP Air Sample Station Concealed by Vegetation	October 17, 2001

4OA1 Performance Indicator Verification

NEI [Nuclear Energy Institute] 99-02	Regulatory Assessment Performance Indicator Guideline	Revision 1

NSP RS-AA-122-112	Performance Indicator - Reactor Coolant Specific Activity	Revision 1
NSP RS-AA-122-113	Performance Indicator-Reactor Coolant System Leakage	Revisions 2
NSP RS-AA-122-116	Performance Indicator - RETS [Radiological Effluent Technical Specifications]/ODCM Radiological Effluent Occurrence	Revision 1
NSP LS-AA-2100	Monthly Performance Indicator Data Elements for Reactor Coolant System Leakage	Revision 06/25/2001
Byron Chemical Control Procedure 300-23	Reactor Coolant or Pressurizer Liquid and/or Pressurized Grab Sample	Revision 22
	Byron Shift Manager's Logs	October 1, 2000 through September 30, 2001
CR B2000-03189	Unit 2 Leakrate Decreased When 2A Charging Pump Secured From ASME Surveillance	October 16, 2000
CR B2000-03370	Documentation Errors Found While Processing NEI/NRC Performance Indicators	October 20, 2000
CR 2001-00547	High Tritium Results	February 5, 2001

4OA3 Event Follow-up

LER 50-455-2001-003-00	Improper Technical Specification Action Condition Application for Process Sampling Containment Isolation Valve Due to Human Performance Error	October 17, 2001

*1 Condition Report written as a result of the inspection.