October 25, 2002

Mr. John L. Skolds, President
Exelon Nuclear
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: BYRON STATION, UNITS 1 AND 2
USNRC INTEGRATED INSPECTION REPORT 50-454/02-06; 50-455/02-06

Dear Mr. Skolds:

On September 30, 2002, the U.S. Nuclear Regulatory Commission (USNRC) completed an integrated inspection at your Byron Station, Units 1 and 2. The enclosed report documents the inspection findings which were discussed on October 4, 2002, with Mr. R. Lopriore and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and to 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.

Three findings of very low safety significance (Green) were identified in the report. Two of the three findings were determined to involve violations of USNRC requirements. However, because of the very low significance of these two findings, and because they were entered into your corrective action program, the USNRC is treating the issues as a Non-Cited Violation in accordance with Section VI.A.1 of the NRC's Enforcement Policy.

If you contest the subject or severity of 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 U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, U. S. Nuclear Regulatory Commission - Region III, 801 Warrenville Road, Lisle, IL 60532-4351; the Director, Office of Enforcement, U. S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the Resident Inspector office at the Byron facility.

During this past year, in response to the terrorist attacks on September 11, 2001, the USNRC issued an Order and several threat advisories to commercial power reactors to strengthen licensees' capabilities and readiness to respond to a potential attack. The USNRC established a deadline of September 1, 2002 for licensees to complete modifications and process upgrades required by the Order. In order to confirm compliance with this Order, the USNRC issued Temporary Instruction 2515/148 and over the next year, the USNRC will inspect each licensee in accordance with this Temporary Instruction. The USNRC continues to monitor overall security controls and may issue additional temporary instructions or require additional inspections should conditions warrant.

In accordance with 10 CFR 2.790 of the USNRC's "Rules of Practice," a copy of this letter and its enclosure will be made available electronically for public inspection in the USNRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the USNRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

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 50-454/02-06;
50-455/02-06

cc w/encl: Site Vice President - Byron
Byron Station Plant Manager
Regulatory Assurance Manager - Byron
Chief Operating Officer
Senior Vice President - Nuclear Services
Senior Vice President - Mid-West Regional
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REGION III

Docket Nos:	50-454; 50-455
License Nos:	NPF-37; NPF-66
Report Nos:	50-454/02-06; 50-455/02-06
Licensee:	Exelon Generation Company, LLC
Facility:	Byron Station, Units 1 and 2
Location:	4450 N. German Church Road Byron, IL 61010
Dates:	July 1 through September 30, 2002
Inspectors:	R. Skokowski, Senior Resident Inspector P. Snyder, Resident Inspector C. Brown, Clinton Resident Inspector R. Jickling, Emergency Preparedness Inspector D. Jones, Reactor Inspector G. O'Dwyer, Reactor Inspector S. Orth, Senior Radiation Specialist S. Ray, Braidwood Senior Resident Inspector S. Sheldon, Reactor Inspector T. Tongue, Project Engineer R. Walton, Reactor Inspector R. Winter, Reactor Inspector C. Thompson, Illinois Department of Nuclear Safety
Approved by:	Ann Marie Stone, Chief Branch 3 Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000454-02-06, 05000455-02-06; Exelon Generation Company, LLC; on 07/01-09/30/02, Byron Station; Units 1 & 2. Heat Sink Performance, Operability Evaluations, and Refueling and Other Outage Activities.

This report covers a 3-month period of baseline resident inspection and announced baseline inspections on radiation protection, emergency preparedness and inservice testing, which included completion on Temporary Instruction 2515/145, "Circumferential Cracking of Reactor Pressure Vessel Head Penetration Nozzles." The inspection was conducted by Region III inspectors and the resident inspectors. Three Green findings, two of which were associated with Non-Cited Violations (NCVs) were identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using IMC 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be "green" or be assigned a severity level after USNRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. Inspection Findings

Cornerstone: Initiating Events

Green. A finding of very low safety significance was identified through a self-revealing event. Specifically, the licensee failed to assess and manage the increase in risk associated switchyard maintenance activities that commenced prior to restoring reactor coolant system (RCS) inventory to greater than 5 percent pressurizer level as required by the licensee's preestablished contingency plan. This was identified when the outage manager contacted the switchyard coordinator to inform him that the prerequisite regarding RCS inventory was about to be met, at which time the outage manager was informed that work already commenced. The primary cause of this finding was related to the cross-cutting area of Human Performance. Although administrative controls were in place to prevent switchyard work the RCS was at reduced inventory, the controls were not implemented.

The finding was more than minor because it increased the likelihood of those events that upset plant stability and challenge a critical safety function, specifically electric power control, during shutdown operations. The finding was of very low safety significance because both emergency diesel generators were subsequently determined to be available; therefore, providing sufficient redundancy such that the licensee's ability to cope with a loss of offsite power was not degraded during the switchyard activities. This was determined to be a Non-Cited Violation of 10 CFR 50.65 (a)(4). (Section 1R20)

Cornerstone: Mitigating Systems

Green. The inspectors identified a finding of very low safety significance regarding inadequate acceptance criteria for the licensee's Generic Letter 89-13 heat exchanger inspections. The inspectors identified this issue during observations and review of the licensee's inspection of an auxiliary feedwater system heat exchanger.

The finding was more than minor because it adversely affected the licensee's ability to ensure that safety-related heat exchangers would be available, reliable, and capable of responding to initiating events to prevent undesirable consequences. The finding was very low safety significance because the as-found and as-left conditions of the heat exchangers did not reveal any actual concerns with the operability of the heat exchangers. This was determined to be a Non-Cited Violation of 10 CFR 50 Appendix B, Criteria V. (Section 1R07)

Cornerstone: Barrier Integrity

Green. A finding of very low safety significance was identified through a self-revealing event when an operator failed to recognize inappropriate indication of a pressurizer liquid sample line isolation valve and failed to communicate this appropriately to the unit supervisor. The primary cause of this finding was related to the cross-cutting area of Human Performance.

This finding was more than minor because it involved misinterpretation of an erroneous valve position indication and the human performance attribute of the Barrier Integrity cornerstone. The finding was very low safety significance because it did not represent a degradation of a radiological barrier and it did not result in an open pathway in the physical integrity of the reactor containment. No violation of USNRC requirements occurred. (Section 1R15)

B. Licensee Identified Violations

No violations of significance were identified.

Report Details

Summary of Plant Status

Unit 1 operated at or near full power throughout the inspection period except on August 15, 2002, when power was reduced to about 91 percent for load following, on September 2, 2002, when power was reduced to about 77 percent for turbine throttle valve/governor valve testing, and on September 23, 2002, when power was reduced to about 83 percent for load following. Unit 2 operated at or near full power until the unit was shut down for a refueling outage on September 16, 2002. Unit 2 remained shut down for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstone: Initiating Events, Mitigating Systems, and Barrier Integrity

1R04 Equipment Alignment (71111.04)

a. Inspection Scope

The inspectors performed partial walkdowns of accessible portions of trains of risk-significant mitigating systems equipment during times when the trains were of increased importance due to the redundant trains or other related equipment being unavailable. The inspectors utilized the valve and electric breaker checklists listed at the end of this report and applicable system drawings to verify that the components were properly positioned and that support systems were lined up as needed. The inspectors also examined the material condition of the components and observed operating parameters of equipment to verify that there were no obvious deficiencies. The inspectors used the information in the appropriate sections of the Updated Final Safety Analysis Report (UFSAR) to determine the functional requirements of the systems.

The inspectors verified the alignment of the following trains:

- 1A Containment Spray System on September 10, 2002;
- 1A and 2A Essential Service Water Trains on July 10, 2002; and
- 1A Auxiliary Feedwater System Train on August 13, 2002.

The inspectors reviewed selected condition reports (CRs) concerning improper equipment alignments to determine if the licensee had properly identified and resolved these issues. The inspectors reviewed the extent of condition, corrective actions taken and corrective action timeliness. The review period was from March 2001 through the present.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Walkdowns

a. Inspection Scope

The inspectors conducted fire protection walkdowns which were focused on availability, accessibility, and the condition of fire fighting equipment; the control of transient combustibles and ignition sources; and on the condition and operating status of installed fire barriers. The inspectors reviewed applicable portions of the Byron Station Fire Protection Report and selected fire areas for inspection based on their overall contribution to internal fire risk, as documented in the Individual Plant Examination of External Events Report. The inspectors verified that fire hoses and extinguishers were in their designated locations and available for immediate use; that fire detectors and sprinklers were unobstructed; that transient material loading was within the analyzed limits; and that fire doors, dampers, and penetration seals appeared to be in satisfactory condition. The documents listed at the end of this report were also used by the inspectors to evaluate this area.

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

- Auxiliary Building Elevation 426' - 0"
  - Zone 11.6 - 0 South
  - Zone 11.6 - 0 North
  - Zone 11.6 - 0 West
  - Zone 11.6-1 - Unit 1 Electrical Penetration Area
  - Zone 11.6-2 - Unit 2 Electrical Penetration Area
  - Zone 11.6E-0 - Decontamination Pad and Storage
  - Zone 12.1-0 - Fuel Handling Building
  - Zone 14.4-0;
- Turbine Building Unit 1 426 elevation - (Zones 8.5-1);
- Unit 2 Containment Building (Zone1.2-2, 1.3-2);
- Unit 2 Diesel Generator Cable Tunnel (Zone 3.1-2);
- Division 21 Electrical Switchgear room (Zone 5.2-2);
- Division 22 Electrical Switchgear Room (Zone 5.1-2); and
- Division 12 Electrical Switchgear Room (Zone 5.1-1).

b. Findings

No findings of significance were identified.

.2 Drill Observation

a. Inspection Scope

The inspectors assessed fire brigade performance and the drill evaluators' critique during a fire brigade drill conducted in the electrical maintenance shop tool and equipment storage area on July 27, 2002. The drill simulated a trash fire in the electrical maintenance shop. The inspectors focused on command and control of the fire brigade activities; fire fighting and communication practices; material condition and use of fire fighting equipment; and implementation of pre-fire plan strategies. The inspectors evaluated the fire brigade performance using the licensee's established fire drill performance procedure criteria. The inspectors verified that minor issues identified during the inspection were entered into the licensee's corrective action program. 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.

1R07 Heat Sink Performance (71111.07)

a. Inspection Scope

On September 19, 2002, the inspectors observed the licensee's inspection of the following safety-related heat exchanger:

- 2B auxiliary feedwater (AFW) pump lube oil cooler.

This heat exchanger was selected for our review because the AFW pump was ranked high in the plant specific risk assessment and was directly connected to the safety-related essential service water system.

During the inspection the inspectors discussed the results and heat exchanger performance with the system engineer and performed an independent inspection of the heat exchanger. Subsequently, the inspectors reviewed the completed work package for the 2B AFW pump lube oil cooler and other 2B AFW system coolers that used essential service water as the cooling medium. Additionally, the inspectors reviewed the Generic Letter 89-13, "Service Water System Problems Affecting Safety-Related equipment," and licensee's procedures governing Generic Letter 89-13 heat exchanger inspections. The inspectors also discussed the adequacy of the licensee's acceptance criteria associated with these heat exchanger inspections with the appropriate engineering supervisor and manager, and the Regulatory Assurance Manager. 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 the issues documented in selected condition reports.

b. Findings

The inspectors identified that the licensee's acceptance criteria for the Generic Letter 89-13 heat exchanger inspections was inadequate to ensure that the inspections were satisfactorily accomplished. This issue was considered to be of very low safety significance (Green) and was dispositioned as a Non-Cited Violation (NCV) of 10 CFR 50 Appendix B, Criteria V "Instructions Procedures and Drawings."

Description

On September 19, 2002, during the licensee's inspection of the 2B AFW pump lube oil cooler heat exchanger, the inspectors reviewed the associated work order (WO) 99275648 and noted that there was not an explicit acceptance criteria provided. The system engineer performing the inspection was questioned regarding the acceptance criteria, and acknowledged that there was not explicit acceptance criteria; however, he also stated that the current conditions were to be compared to past observations. Subsequently, the inspector reviewed the licensee's Procedure ER-AA-340-1002, "Service Water Heat Exchanger and Component Inspection Guide," Revision 0, and discussed the licensee's heat exchanger inspection program with the applicable engineering program supervisor and manager, and the Regulatory Assurance Manager. As a result of these discussions and procedure reviews, the inspectors ascertained that the procedure required that a written assessment comparing the as-found conditions of the heat exchangers to the pre-inspection expectation. However, no written assessment was made for any of the five 2B AFW system exchangers inspection work packages reviewed by the inspectors (WOs 99215024, 99275593, 99275594, 99275648, 99275649).

The inspectors reviewed the heat exchanger inspection data sheets for the five 2B AFW heat exchangers and noted little or no degradation. However, the inspectors noted that for three of the five heat exchangers the as-found conditions were worse than the past inspection results with no explanation provided regarding the increased degradation. The inspectors discussed the results with the members of the licensee's engineering staff and USNRC Region III specialist inspectors and concluded that in all cases there was no impact on the operability. This was based on the fact that in all cases less than 10 percent of the tubes were found plugged and that the licensee cleaned all the heat exchangers before returning them to service. The inspectors also concluded the acceptance criteria as provided in Procedure ER-AA-340-1002 was inadequate for determining whether heat exchanger performance would remain satisfactory until the next inspection.

Analysis

The inspectors determined that the failure to have an adequate acceptance criteria for the Generic 89-13 heat exchanger inspections was a deficiency warranting a significance evaluation in accordance with USNRC Inspection Manual Chapter (IMC) 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Disposition Screening,"

issued on April 29, 2002. The inspectors determined that the finding was more than minor because it involved the equipment performance attribute of the Mitigating Systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences.

The inspectors determined that the finding could be evaluated using the Significance Determination Process (SDP) in accordance with IMC 0609, "Significance Determination Process," because the finding was associated with the availability and reliability of a train in a mitigating system. However, since the heat exchanger inspection results did not reveal any actual concerns with the operability of the heat exchangers, the inspectors answered "no" to all the SDP Phase 1 screening questions regarding mitigating systems. Therefore, this finding was considered to be of very low safety significance (Green).

Enforcement

10 CFR 50 Appendix B, Criteria V, "Instructions, Procedure, and Drawings," required, in part, that Instructions, procedures or drawings include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished. Contrary to the above, on or before September 19, 2002, the licensee Procedure ER-AA-340-1002, "Service Water Heat Exchanger and Component Inspection Guide," failed to include to an appropriate acceptance criteria for determining whether heat exchanger performance would remain satisfactory until the next inspection. Because of the very low safety significance, this violation is being treated as a Non-Cited Violation consistent with Section VI.A of the USNRC Enforcement Policy (NCV 50-454/455/02-06-01). The licensee entered this violation into its corrective action program as CR 00125982.

1R08 Inservice Inspection Activities (71111.08)

a. Inspection Scope

The inspectors conducted a review of the licensee's inservice inspection program for monitoring degradation of the reactor coolant system boundary and the risk significant piping system boundaries. Specifically, the inspectors conducted a record review of the following examinations:

WELD #	SYSTEM	Nondestructive Testing TYPE
2CV05CB-6"	Chemical and Volume Control	Ultrasonic Testing
2RC35AA-6"	Reactor Coolant	Ultrasonic Testing
2RH02AA-8"	Residual Heat Removal	Ultrasonic Testing
2RY02AA-8"	Reactor Coolant	Ultrasonic Testing
2MS01AA-30-1/4"	Main Steam	Magnetic Particle Testing

These examinations were evaluated for compliance with the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code requirements. The inspectors also reviewed inservice inspection procedures, equipment certifications,

personnel certifications, and NIS-2 forms for Code repairs performed during the Unit 1 outage (B1R11) to confirm that ASME Code requirements were met.

A sample of inservice inspection related problems documented in the licensee's corrective action program was also reviewed to assess conformance with 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," requirements. In addition, the inspectors determined that operating experience was correctly assessed for applicability by the inservice inspection group.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification (71111.11)

a. Inspection Scope

On August 6, 2002, the inspectors observed an operating crew during an "out-of-the-box" requalification examination on the simulator using Scenario BY-46, "Respond to an Anticipated Transient Without Scram and Miscellaneous Malfunctions," The inspectors evaluated crew performance in the areas of:

- clarity and formality of communications;
- ability to take timely actions in the safe direction;
- prioritization, interpretation and verification of alarms;
- procedure use;
- control board manipulations;
- supervisor's command and control;
- management oversight; and
- group dynamics.

Crew performance in these areas was compared to licensee management expectations and guidelines as presented in the following documents:

- OP-AA-101-111, "Rules and Responsibilities of On-Shift Personnel, " Revision 0;
- OP-AA-103-102, "Watchstanding Practices," Revision 0;
- OP-AA-103-103, "Operation of Plant Equipment," Revision 0;
- OP-AA-103-104, "Reactivity Management Control," Revision 0; and
- OP-AA-104-101, "Communications," Revision 0.

The inspectors verified that the crew completed the critical tasks listed in the above simulator guide. The inspectors also compared simulator configurations with actual control board configurations. For any weaknesses identified, the inspectors observed the licensee evaluators to verify that they also noted the issues and discussed them in the critique at the end of the session.

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 the issues documented in selected condition reports listed at the end of this report.

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:

- Component Cooling Water System (July 1 - 12, 2002), and
- Ultimate Heat Sink Temperature and Level Control (July 16 - 19 , 2002).

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. These aspects were evaluated using the maintenance rule scoping and report documents listed at the end of this report. For each system, structure, and component (SSC) reviewed, the inspectors also reviewed the significant WOs and CRs listed at the end of this report to verify that failures were properly identified, classified, and corrected, and that unavailable time had been properly calculated. The inspectors also interviewed system engineers, operations department personnel 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 the issues documented in selected condition reports.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed the licensee's management of plant risk during emergent maintenance activities or during activities where more than one significant system or train was unavailable. The inspectors chose activities based on their potential to increase the probability of an initiating event or impact the operation of safety-significant equipment. The inspectors verified that evaluation, planning, control, and performance of the work was done in a manner to reduce the risk and the work duration was

minimized where practical. The inspectors also verified that contingency plans were in place where appropriate.

The inspectors reviewed configuration risk assessment records, observed operator turnover, observed plan-of-the-day meetings, and reviewed the documents listed at the end of this report to verify that the equipment configurations had been properly listed, that protected equipment had been identified and was being controlled where appropriate, and that significant aspects of plant risk were being communicated to the necessary personnel. The inspectors verified that the licensee controlled emergent work in accordance with Nuclear Station Procedure WC-AA-101, "On-Line Work Control Process," Revision 6.

The inspectors reviewed the following activities:

- Essential Service Water Tower 0B Suction Valve (0SX138B) Actuator Replacement (July 10, 2002).

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 the issues documented in selected condition reports listed at the end of this report.

b. Findings

No findings of significance were identified with the item reviewed under this inspection procedure. However, a finding related to the inadequate assessment and management of maintenance risk assessment was described below in Section 1R20, "Refueling and Outage Activities."

1R14 Personnel Performance Related to Non-routine Plant Evolutions and Events (71111.14)

a. Inspection Scope

On September 16, 2002, the inspectors observed control room operators shut down Unit 2 for refueling outage B2R10. The inspectors evaluated crew performance in the areas of:

- clarity and formality of communications;
- ability to take timely actions in the safe direction;
- prioritization, interpretation and verification of alarms;
- procedure use;
- control board manipulations;
- supervisor's command and control;
-

- management oversight; and
- group dynamics.

Crew performance in these areas was compared to licensee management expectations and guidelines as presented in the following documents:

- OP-AA-101-111, “Rules and Responsibilities of On-Shift Personnel, “ Revision 0;
- OP-AA-103-102, “Watchstanding Practices,” Revision 0;
- OP-AA-103-103, “Operation of Plant Equipment,” Revision 0;
- OP-AA-103-104, “Reactivity Management Control,” Revision 0; and
- OP-AA-104-101, “Communications,” Revision 0.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors evaluated plant conditions, selected CRs and operability determinations (ODs) for risk-significant components and systems in which operability issues were questioned. These conditions were evaluated to determine whether the operability of components was justified.

The inspectors reviewed the following operability evaluations:

- OD 02-012, 1A Reactor Containment Fan Cooler Elevated Vibration Levels (August 22, 2002); and
- OD 02-009, Leakage of SI8819 Check Valves Pressurizing Safety Injection Pump Discharge Lines (September 17, 2002).

The inspectors compared the operability and design criteria in the appropriate section of the Technical Specification (TS) and UFSAR to the licensee’s evaluations to verify that the components or systems were operable. The inspectors determined whether compensatory measures, if needed, were taken; and determined whether the evaluations were consistent with the requirements of licensee’s Procedure LS-AA-105, “Operability Determination Process,” Revision 0. The inspectors also discussed the details of the evaluations with the shift managers and appropriate members of the licensee’s engineering staff.

In addition, the inspectors also reviewed selected 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. In particular, the inspectors focused on the licensee’s evaluation of CR 107967, regarding a potentially inoperable pressurizer liquid sample line isolation valve.

b. Findings

A finding of very low safety significance (Green) was self-revealed related to a licensed operator's failure to communicate the status of a failed "shut" indication for containment isolation valve 1PS9355A (Unit 1 pressurizer liquid sample isolation valve). This finding was not considered a violation of regulatory requirements.

Description

On May 13, 2002, at about 7:00 a.m. the valve (1PS9355A) was shut remotely from the control room and the "closed" indicating light failed to illuminate. The operator changed the indicating light bulb but did not get the closed light again. He informed the Unit Supervisor (US) who replaced the indicating light a second time, had the operator cycle the valve twice, and the light illuminated as expected. During one of the initial attempts to shut the valve, the operator moved the control switch from the open position, to the shut position then to the automatic position. The "open" light went out then on again. It was later determined that the valve opened because the micro-switch for the closed indication was not made up. This reopening was not communicated to the US. No other communications such as a log entry were made at that time. About 12 hours later, the operator returned for the shift and questioned the stroke time of the valve because it seemed slow during the earlier cycling. The valve timing was tested satisfactorily; however, the closed light failed to light again as it had earlier. At this point, the valve was declared inoperable, an appropriate log entry was made, a condition report was generated, and the Technical Specification Limiting Condition for Operation Action Requirement (LCOAR) was entered. A prompt investigation revealed that the valve was operable and capable of performing its isolation function as required. The failure of the closed indication light was the result of an intermittent failure of the closed micro-switch on the valve which also caused the valve to reopen when the control switch was placed in the automatic position during one of the initial cycles.

The root cause investigation also revealed human performance problems in that the communications between the operator and the US were poor and their actions to change the light bulbs were inadequate to correct the basic problem. In addition, when the first failures occurred, no log entries were made, no condition report was written, the appropriate LCOAR was not recognized and entered, and a work request was not generated. These were created on the following shift when the valve was timed and the closed light failed to illuminate as it should have.

Analysis

The inspectors determined that the failure to properly communicate the indications of a failed containment isolation valve, was an operator performance deficiency warranting a significance evaluation in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Disposition Screening," issued on April 29, 2002. The inspectors determined that the finding was more than minor because it involved misinterpretation of an erroneous valve position indication and human performance attributes of the Barrier Integrity cornerstone. The inspectors determined that the error by the operator also affected the cross-cutting area of Human Performance because despite having the valve behave in an unexpected manner, e.g., returned to the open

position when the control switch was placed in the automatic position, the operator failed to show a questioning attitude, inform the supervisor, and generate appropriate documentation in a timely manner.

The inspectors determined that the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," because the finding was associated with a potentially degraded containment isolation valve and its ability to isolate if called upon as discussed above. For the Phase 1 screening, the inspectors answered "no" to all three questions in the Containment Barrier column because it did not represent a degradation of a radiological barrier, it did not represent a degraded barrier function, and it did not result in an open pathway in the physical integrity of the reactor containment. Therefore, the finding was of very low safety significance (Green) (FIN 50-454/02-06-02).

Enforcement

The inspectors determined that the valve did shut and that only a micro-switch failed giving an erroneous indication. The valve remained operable; therefore, no violation of regulatory requirements occurred. The licensee entered the event into its corrective action system as CR 00107967 "Sample Valve 1PS9355A Does Not Indicate Closed."

1R17 Permanent Plant Modifications (71111.17)

a. Inspection Scope

The inspectors evaluated the following permanent plant modifications:

- Unit 2B Emergency Diesel Generator (EDG) Governor Upgrade (September 23 -27, 2002).

The inspectors reviewed the 2B EDG Governor modification installed during the September 2002, Unit 2 refueling outage to verify that the design basis, licensing basis, and performance capability of risk significant systems were not degraded by the installation of the modification. The inspectors considered the design adequacy of the modifications by performing a review, of the modification's impact on plant electrical requirements, material requirements and replacement components, response time, control signals, equipment protection, operation, failure modes, and other related process requirements.

The documents listed at the end of the report were used in the assessment of this area.

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed the post maintenance testing activities associated with maintenance or modification of mitigating, barrier integrity, and support systems that were identified as risk significant in the licensee's risk analysis. The inspectors reviewed these activities to verify that the post maintenance testing was performed adequately, demonstrated that the maintenance was successful, and that operability was restored. During this inspection activity, the inspectors interviewed maintenance and engineering department personnel and reviewed the completed post maintenance testing documentation. The inspectors used the appropriate sections of the TS and UFSAR, as well as the documents listed at the end of this report, to evaluate this area.

Testing subsequent to the following activities was observed and evaluated:

- 0SX138B Essential Service Water Valve Actuator Replacement (July 10, 2002);
- Unit 2B Emergency Diesel Generator Ventilation Fan Breaker Replacement (July 18, 19, 2002);
- Unit 1 Digital Electrical Hydraulic Control System Repairs following the Failure of the Display and Transfer to Manual (August 1, 2002);
- 0A Control Room Make Up System Charcoal Adsorber Bank (August 19, 2002);
- 2B Residual Heat Removal Train Maintenance (September 24, 2002);
- 2B Charging Pump Maintenance (September 24, 2002); and
- 2B Emergency Diesel Generator (September 26, 27, 2002).

b. Findings

No findings of significance were identified.

1R20 Refueling and Outage Activities (71111.20)

a. Inspection Scope

The inspectors evaluated the licensee's conduct of B2R10 refueling outage activities to assess the licensee's control of plant configuration and management of shutdown risk. The inspectors reviewed configuration management to verify that the licensee maintained defense-in-depth commensurate with the shutdown risk plan; reviewed major outage work activities to ensure that correct system lineups were maintained for key mitigating systems; and observed refueling activities to verify that fuel handling operations were performed in accordance with the TS and approved procedures. Other major outage activities evaluated included the licensee's control of:

- containment penetrations in accordance with the TS;
- SSCs which could cause unexpected reactivity changes;
- flow paths, configurations, and alternate means for reactor coolant system (RCS) inventory addition and control of SSCs which could cause a loss of inventory;
- RCS pressure, level, and temperature instrumentation;
- spent fuel pool cooling during and after core offload;

- switchyard activities and the configuration of electrical power systems in accordance with the TS and shutdown risk plan; and
- SSCs required for decay heat removal.

The inspectors observed portions of the plant cooldown, including the transition to shutdown cooling, to verify that the licensee controlled the plant cooldown in accordance with the TS. In addition, the inspectors evaluated portions of the restart preparation activities to verify that requirements of the TS and administrative procedure requirements were met prior to changing operational modes or plant configurations. Major restart preparation inspection activities performed included:

- verification that RCS boundary leakage requirements were met prior to entry into mode 4 (cold shutdown) and subsequent operational mode changes;
- verification that containment integrity was established prior to entry into mode 4;
- inspection of the containment building to assess material condition and search for loose debris, which if present could be transported to the containment recirculation sumps and cause restriction of flow to the emergency core cooling system (ECCS) pump suctions during loss-of-coolant accident conditions; and
- verification that the material condition of the containment building ECCS recirculation sumps met the requirements of the TS and was consistent with the design basis.

The inspectors interviewed operations, engineering, work control, radiological protection, and maintenance department personnel and reviewed selected procedures and documents.

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 refueling outage issues documented in selected condition reports.

The documents listed at the end of the report were used in the assessment of this area.

Outage activities were still in progress at the end of this inspection period. Additional findings, if any, will be documented at the close of the inspection in a subsequent inspection report.

b. Findings

A finding of very low safety significance (Green) was self-revealed. With Unit 2 in Mode 5 (Cold Shutdown), the licensee failed to assess and manage the increase in risk associated maintenance activities as required by 10 CFR 50.65(a)(4). Specifically, contrary to the preestablished contingency plan, the licensee commenced switchyard maintenance activities prior to restoring RCS inventory to greater than 5 percent pressurizer level. This issue was considered to be of very low safety significance and was dispositioned as a Non-Cited Violation.

Description

On the morning of September 27, 2002, the licensee inappropriately commenced switchyard maintenance activities while the RCS was at reduced inventory, and the 2B EDG was out-of-service for testing following maintenance. Although the switchyard work was scheduled for completion on the morning of September 27, the licensee also had administrative controls in place requiring sufficient RCS inventory be established prior to starting the switchyard work. Specifically, the licensee's shutdown risk contingency plan B2R10 CP-10, for conditions with reduced inventory in the RCS, required administrative control to be in place controlling switchyard activities until RCS inventory was greater than 5 percent pressurizer level. After approximately three hours, the licensee discovered that switchyard work commenced while they were still at reduced inventory. This occurred when the outage manager contacted the switchyard coordinator to inform him that the prerequisite regarding RCS inventory was about to be met, at which time the outage manager was informed that work already commenced. Upon discovery, the licensee stopped the work in the switchyard and initiated a prompted investigation of the event.

The licensee's original outage risk evaluation for reduced inventory conditions with the 2B EDG unavailable reflected a "yellow" risk configuration (i.e., acceptable but reduced level of defense). Furthermore, the outage risk analysis recognized the significance of controlling switchyard maintenance activities by establishing the administrative controls. By completing the switchyard maintenance activities with reduced inventory while the 2B EDG was out of service, the licensee inadvertently entered a higher "orange" risk configuration (i.e., minimum acceptable level of defense). The licensee's plant shutdown safety and risk management procedure, OU-AA-103, "Shutdown Safety Management Program," required the implementation of additional risk management actions to protect available equipment and to maintain an adequate level of defense which were not taken for the unplanned entry into the "orange" risk configuration.

Subsequently, the licensee determined that the 2B EDG was available, from a shutdown risk perspective, while the switchyard work was in progress. This was based on the following

- all testing of the 2B EDG was completed satisfactorily indicating that it was available from the time the associated maintenance was completed, and
- all maintenance was completed on the 2B EDG prior to commencing the switchyard work.

Therefore, the actual shutdown risk remained yellow during the entire time switchyard maintenance was being performed.

Analysis

The inspectors determined that the failure to assess and manage the risk associated with switchyard maintenance while the Unit 2 RCS was at reduced inventory and the 2B EDG was believed to be unavailable was a deficiency warranting a significance evaluation in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Disposition Screening," issued on April 29, 2002. The inspectors determined

that the finding was more than minor because it involved the configuration control and human performance attributes of the Initiating Events cornerstone. This finding affected the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge a critical safety function, specifically electric power control, during shutdown operations. The inspectors determined that the error by the switchyard coordinator also affected the cross-cutting area of Human Performance because despite having the administrative controls in place to prevent the working in the switchyard while the RCS was at reduced inventory, the controls were not implemented.

The inspectors determined that the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," because the finding was associated with a potential increase in the likelihood of an initiating event. The inspectors utilized the guidance in IMC 0609, Appendix G, "Shutdown Operations Significance Determination Process." Specifically, the checklist for "Pressurized Water Reactor Cold Shutdown and Refueling Operation - Reactor Coolant System Closed and No Inventory in Pressurizer, Time to boiling less than 2 hours" since this best matches the plant conditions at the time of the event. This guidance specified that control over switchyard and transformer yard activities is required for the plant conditions that existed. However, since both EDGs were subsequently determined to be available, the inspectors discussed the issue with a USNRC Region III Senior Risk Analyst. Based on this discussion, the inspectors concluded that having both EDGs available provided sufficient redundancy such that the licensee's ability to cope with a loss of offsite power was not degraded during the switchyard activities. Therefore, based on the guidance in IMC 0609 Appendix G, this issue was determined to be of very low safety significance (Green).

Enforcement

10 CFR 50.65(a)(4) requires, in part, that before performing maintenance activities (including but not limited to surveillances, post-maintenance testing, and corrective and preventive maintenance), the licensee shall assess and manage the increase in risk that may result from the proposed maintenance activities. Contrary to the above, on September 27, 2002, the licensee failed to assess and manage the risk associated with maintenance activities affecting the switchyard while the reactor system was at reduced inventory and the 2B EDG was believed to be unavailable. This resulted in the inadvertent entry into a higher shutdown risk configuration, for which the licensee had not implemented additional risk management actions to protect available equipment to maintain an adequate level of defense. Because of the very low safety significance, this violation is being treated as a Non-Cited Violation consistent with Section VI.A of the USNRC Enforcement Policy (NCV 50-455/02-06-03). The licensee entered this violation into its corrective action program as CR 00124902.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors witnessed selected surveillance testing and/or reviewed test data to verify that the equipment tested using the surveillance procedures met the TS, the Technical Requirements Manual, the UFSAR, and licensee procedural requirements,

and demonstrated that the equipment was capable of performing its intended safety functions. The activities were selected based on their importance in verifying mitigating systems capability and barrier integrity. The inspectors used the documents listed at the end of this report to verify that the testing met the frequency requirements; that the tests were conducted in accordance with the procedures, including establishing the proper plant conditions and prerequisites; that the test acceptance criteria were met; and that the results of the tests were properly reviewed and recorded. In addition, the inspectors interviewed operations, maintenance and engineering department personnel regarding the tests and test results.

The inspectors evaluated the following surveillance tests:

- Unit 1 Surveillance Requirement for Train A Containment Spray Valve (July 1, 2002);
- Unit 1 Operability Surveillance Requirements for 1B Diesel Generator (July 10);
- Unit 2 ASME Surveillance Requirements for the 2B Essential Service Water Pump and Discharge Check Valve (July 12, 2002);
- Unit 1 Train B Solid State Protection System Bi-Monthly Surveillance (July 15, 2002);
- Unit 0 'A' Essential Service Water Makeup Pump Monthly Operability Test (August 21, 2002);
- Unit 2 Engineered Safety Feature Actuation System Instrumentation Slave Relay Surveillance Tests (R-632A)(R-610) (August 22, 2002);
- Unit 2 Passive Indication Test of 2SX004, 2SX010, 2SX011, 2SX033, 2SX034 and 2SX136 (August 22, 2002); and
- Unit 2 Train B Manual Safety Injection Initiation and Manual Phase A Initiation (September, 17, 2002),
- Unit 2 Emergency Core Cooling Systems Full Flow Test (September 19, 2002); and
- Unit 2 Local Leak Rate Test of 2VQ005 (September 23, 2002).

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 the 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 and evaluated the following temporary plant modification on risk-significant equipment:

- EC# 336844, “Provide Temporary Setpoint Band Change for Underfrequency Relay 0SSL-SY077 to MCR Annunciator 0-35-F5”, Revision 0 (July 2002), and
- EC# 333751, “Install A3 Cable to the A4 Preamplifier at the 2NR-13”, Revision 0 (July 2002)

The inspectors reviewed these temporary plant modifications to verify that the instructions were consistent with applicable design modification documents and that the modifications did not adversely impact system operability or availability. The inspectors interviewed operations, engineering and maintenance personnel as appropriate 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.

The inspectors reviewed the issues that the licensee entered into its corrective action program to verify that identified temporary modification problems were being entered into the program with the appropriate characterization and significance. The inspectors also reviewed the licensee’s corrective actions for temporary modification related issues documented in selected condition reports. The condition reports are specified in the List of Documents Reviewed.

b. Findings

No findings of significance were identified

Cornerstone: Emergency Preparedness

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

a. Inspection Scope

The inspectors discussed with Emergency Preparedness (EP) staff the design, equipment, and periodic testing of the public ANS for the Byron reactor facility emergency planning zone to verify that the system was properly tested and maintained. The inspectors also reviewed procedures and records for a six-month period ending June 2002, related to ANS testing, annual preventive maintenance, and non-scheduled maintenance. The inspectors reviewed the licensee’s criteria for determining whether each model of siren installed in the emergency planning zone would perform as expected if fully activated. Records used to document and trend component failures for each model of installed siren were also reviewed to ensure that corrective actions were taken for test failures or system anomalies.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed the licensee's ERO augmentation testing to verify that the licensee maintained and tested its ability to staff the ERO during an emergency in a timely manner. Specifically, the inspectors reviewed semi-annual, off-hours staff augmentation drill procedures, related June 19 and 25, 2001, December 13, 2001, and March 29, 2002, drill records, primary and backup provisions for off-hours notification of the Byron reactor facility emergency responders, and the current ERO rosters for Byron. The inspectors reviewed and discussed the facility EP staff's provisions for maintaining ERO call out lists.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed the Nuclear Oversight staff's 2001 - 2002 audits and field observations to ensure that these audits complied with the requirements of 10 CFR 50.54(t) and that the licensee adequately identified and corrected deficiencies. The inspectors also reviewed the EP staff's self-assessments and critiques to evaluate the EP staff's efforts to identify and correct weaknesses and deficiencies. Additionally, the inspectors reviewed a sample of EP items, condition reports, and action requests related to the facility's EP program to determine whether corrective actions were acceptably completed.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

On August 21, 2002, the inspectors reviewed an after-hours EP exercise to assess the licensee's exercise performance and identify weaknesses in the risk significant areas of emergency classification, notification and protective action development. The inspectors used the criteria listed in the guidance documents at the end of this report to identify weaknesses. The inspectors compared the inspector-identified weaknesses to the licensee-identified weaknesses to determine whether the licensee properly identified

failures. The inspectors verified that minor issues identified during the inspection were entered into the licensee's corrective action program. The inspectors observed the exercise from the following facilities:

- Control Room Simulator,
- Technical Support Center, and
- Operations Support Center.

a. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety (OS)

2OS1 Access Control to Radiologically Significant Areas (71121.01)

.1 Plant Walkdowns and Radiological Boundary Verifications

a. Inspection Scope

The inspectors performed walkdowns of the radiologically controlled area (RCA) to verify the adequacy of radiological boundaries and postings. Specifically, the inspectors performed confirmatory radiation measurements in the Unit 2 Containment Building to verify that radiologically significant work areas (high radiation areas (HRAs), radiation areas, and airborne radioactivity areas) were properly posted and controlled in accordance with 10 CFR 20 and the licensee's procedures. During this review, the inspectors evaluated the licensee's dose assessments for any actual internal exposures greater than 50 millirem committed effective dose equivalent. The inspectors also reviewed the licensee's controls for the storage of irradiated materials (non-fuel) in the spent fuel pool to ensure that appropriate measures were in place to prevent the inadvertent removal of those materials, which could result in significant exposures to personnel.

b. Findings

No findings of significance were identified.

.2 High Risk Significant, High Dose Rate High Radiation Area (HRA) and Very High Radiation Area (VHRA) Controls

a. Inspection Scope

The inspectors reviewed the licensee's controls for access to risk significant HRAs and VHRAs to ensure that the licensee's controls were consistent with the requirements contained in 10 CFR 20 and contained within its Technical Specifications. Specifically, the inspectors discussed the controls with members of the radiation protection staff and reviewed applicable procedures. The inspectors also performed walkdowns of the Unit 2

Containment Building to ensure adequate posting and locking of entrances to high dose rate (>25 rem in one hour at 30 centimeters) HRAs and VHRAs.

b. Findings

No findings of significance were identified.

.3 Problem Identification and Resolution

a. Inspection Scope

The inspectors reviewed condition reports completed during the previous four months which identified issues in radiation worker and radiation protection technician performance. The inspectors reviewed these documents to assess the licensee's ability to identify repetitive problems, contributing causes, the extent of conditions, and corrective actions which will achieve lasting results.

b. Findings

No findings of significance were identified.

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

.1 Radiological Work Planning

a. Inspection Scope

The inspectors reviewed the licensee's radiological planning for the following Unit 2 outage work activities:

- Reactor Cavity Decontamination,
- Steam Generator Secondary Side Cleaning,
- Reactor Head Removal and Installation, and
- Entry into Reactor Vessel Bottom Incore Area.

The inspectors evaluated the licensee's exposure estimates and exposure mitigation techniques to verify that the licensee had established procedures and engineering and work controls, based on sound ALARA principles, to achieve occupational exposures that were ALARA. The inspectors also compared the accumulated exposures for work activities to the licensee's planning and evaluated the reasons for any inconsistencies between intended and actual work activity doses.

b. Findings

No findings of significance were identified.

.2 Radiation Dose Estimates and Exposure Tracking Systems

a. Inspection Scope

The inspectors reviewed the licensee's Unit 2 outage dose goals and dose trending. The inspectors evaluated the licensee's method for adjusting dose estimates to verify that the licensee implemented sound radiation protection principles and properly identified work control problems. The inspectors also attended site ALARA committee meetings that discussed and approved dose adjustments for steam generator work activities.

b. Findings

No findings of significance were identified.

.3 Job Site Inspections and ALARA Controls

a. Inspection Scope

The inspectors observed work activities in the RCA that were performed in radiation areas or HRAs to evaluate the use of ALARA controls. Specifically, the inspectors assessed the implementation of radiation work permits, engineering and ALARA controls, and radiological surveys and observed pre-job radiological briefings (as available) and radiation protection technician performance for the following Unit 2 work activities:

- Reactor Coolant Pump A Seal Replacement,
- Reactor Cavity Decontamination, and
- Entry into Reactor Vessel Bottom Incore Area.

The inspectors also observed radiation worker performance to verify that the training and skill levels demonstrated by the workers was sufficient with respect to the radiological hazards present and the work involved. During the observation of work activities, the inspectors evaluated workers' use of low dose waiting areas and the level of on-the-job supervision provided by the licensee to ensure that ALARA requirements were met.

b. Findings

No findings of significance were identified.

.4 Source Term Reduction

a. Inspection Scope

The inspectors reviewed the status of the licensee's source term reduction program. In particular, the inspectors evaluated the licensee's implementation of improvements to the hot spot tracking and reduction program and the status of the licensee's revised source term reduction procedure implementation. The inspectors also performed surveys within the RCA to verify the accuracy of the licensee's records/surveys and to

identify any other significant, unidentified sources of radiation exposure.

b. Findings

No findings of significance were identified.

.5 Declared Pregnant Workers

a. Inspection Scope

The inspectors reviewed the controls implemented by the licensee for an individual who voluntarily declared her pregnancy within the last 18 months (December 2001). Specifically, the inspectors reviewed the licensee's adherence to the requirements contained in 10 CFR 20.1208 and its procedures and reviewed the licensee's evaluation of the dose to the individual's embryo/fetus.

b. Findings

No findings of significance were identified.

.6 Problem Identification and Resolution

a. Inspection Scope

The inspectors reviewed self-assessments, audits, and condition reports completed during the previous four months which focused on ALARA planning and controls and the radiological source term reduction program. The inspectors reviewed these documents to assess the licensee's ability to identify repetitive problems, contributing causes, the extent of conditions, and corrective actions which will achieve lasting results.

b. Findings

No findings of significance were identified.

3. SAFEGUARDS

Cornerstone: Physical Protection

3PP3 Response to Contingency Events (71130.03)

a. Inspection Scope

The Office of Homeland Security (OHS) developed a Homeland Security Advisory System (HSAS) to disseminate information regarding the risk of terrorist attacks. The HSAS implements five color-coded threat conditions with a description of corresponding actions at each level. USNRC Regulatory Information Summary (RIS) 2002-12a, dated August 19, 2002, "NRC Threat Advisory and Protective Measures System," discusses the HSAS and provides additional information on protective measures to licensees.

On September 10, 2002, the USNRC issued a Safeguards Advisory to reactor licensees to implement the protective measures described in RIS 2002-12a in response to the Federal government declaration of threat level "orange." Subsequently, on September 24, 2002, the OHS downgraded the national security threat condition to "yellow" and a corresponding reduction in the risk of a terrorist threat.

The inspectors interviewed licensee personnel and security staff, observed the conduct of security operations, and assessed licensee implementation of the threat level "orange" protective measures. Inspection results were communicated to the region and headquarters security staff for further evaluation.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

Cornerstone: Mitigating Systems, Barrier Integrity, and Emergency Preparedness

.1 Reactor Coolant System Activity Performance Indicators

a. Inspection Scope

The inspectors verified that the licensee had accurately reported the RCS activity performance indicator. Specifically, the inspectors reviewed the licensee's sample analyses results for maximum dose equivalent iodine-131 (September 2001 through June 2002), performed independent calculations of dose equivalent iodine-131, and reviewed applicable chemistry procedures. The inspectors also observed a chemistry technician obtain and analyze an RCS sample.

b. Findings

No findings of significance were identified.

.2 Reactor Coolant System Leakage Performance Indicators

a. Inspection Scope

The resident inspectors verified that the licensee had accurately reported the reactor coolant system leakage performance indicator. The inspectors reviewed the data for the period of July 2001 through June 2002 found in the shift manager logs, calculations performed by procedure, and records of reactor coolant system water inventory balance surveillances from the process computer. The information was compared to the criteria of NEI 99-02 "Regulatory Assessment Performance Indicator Guidelines," Revision 2, of November 19, 2001, and compared to the information provided to the USNRC in quarterly submittals.

.3 Safety System Functional Failures Performance Indicators

a. Inspection Scope

The inspectors verified that the licensee had accurately reported the safety system functional failures performance indicator. The inspectors reviewed selected conditions reported in Licensee Event Reports, CRs and control room logs from July 1, 2001 to June 30, 2002, and reviewed that the licensee had appropriately reported those conditions that prevented, or could have prevented, the fulfillment of a safety function. The condition reports are specified in the List of Documents Reviewed.

b. Findings

No findings of significance were identified.

.4 Safety System Unavailability Performance Indicators

a. Inspection Scope

The inspectors verified that the licensee had accurately reported the safety system unavailability performance indicators for the following systems:

- Safety System Unavailability - High Pressure Safety Injection, and
- Safety System Unavailability - Residual Heat Removal.

The inspectors reviewed condition reports, Performance Indicator Data Elements, operating logs, maintenance history and surveillance test history for unavailability information for these systems from July 1, 2001 to June 30, 2002. The condition reports are specified in the List of Documents Reviewed. The inspectors also reviewed the licensee's calculation of critical hours for both units and evaluated applicable safety system equipment unavailability against the performance indicator definition.

b. Findings

No findings of significance were identified.

.5 Emergency Preparedness Performance Indicators

a. Inspection Scope

The inspectors verified that the licensee had accurately reported these indicators: ANS Reliability, ERO Drill Participation, and Drill and Exercise Performance (DEP), for the EP cornerstone. Specifically, the inspectors reviewed the licensee's Performance Indicator records, data reported to the NRC, and condition reports for the period October 2001 through March 2002, to identify any occurrences that were not identified by the licensee. Records of relevant Control Room Simulator training sessions, periodic ANS tests, and excerpts of drill and exercise scenarios and evaluations were also reviewed.

b. Findings

No findings of significance were identified

4OA4 Cross-Cutting Findings

.1 A finding described in Section 1R15 of this report had, as its primary cause, a human performance deficiency, in that, a licensed operator, failed to properly communicate, show a questioning attitude, and failed to identify an indication of a failed containment isolation valve.

.2 A finding described in Section 1R20 of this report had, as its primary cause, a human performance deficiency, in that despite having the administrative controls in place to prevent the working in the switchyard while the RCS was at reduced inventory, the controls were not implemented.

4OA5 Other

.1 Circumferential Cracking of Reactor Pressure Vessel Head Penetration Nozzles (Temporary Instruction 2515/145)

a. Inspection Scope

The inspectors performed a review of the licensees' activities in response to USNRC Bulletin 2001-01, "Circumferential Cracking of Reactor Pressure Vessel Head Penetration Nozzles," to verify compliance with applicable regulatory requirements. In accordance with the guidance of USNRC Bulletin 2001-01, the Byron Plant was characterized as belonging to the sub-population of plants (Bin 4) that were considered to have a low susceptibility to primary stress corrosion cracking based upon a susceptibility ranking of more than 30 effective full power years of operation from that of the Oconee Nuclear Station, Unit 3 condition. Although, the low likelihood of primary water stress corrosion cracking at Bin 4 facilities indicates that examination is not necessary, Byron responded to USNRC Bulletin 2001-01 by performing a direct visual examination of the reactor vessel head. The inspectors interviewed inspection personnel, reviewed procedures and inspection reports, including video tape documentation, to assess the licensee's efforts in conducting an "effective" visual examination of the reactor vessel head.

b. Evaluation of Inspection Requirements

1. Were the licensee's examinations performed by qualified and knowledgeable personnel?

Yes, the inspectors determined that the examinations were performed by personnel certified as Level II or Level III VT-2 in accordance with procedure SPP 2-1-0, "Certification of VT-Examiners for ASME Section XI." In addition, the licensee provided the individuals with training specific to the guidelines described in the Electric Power Research Institute (EPRI) 1006296, "Visual Examination for Leakage of PWR [Pressurized Water Reactor] Reactor Head Penetrations."

2. Were the licensee's examinations performed in accordance with approved and

adequate procedures?

The inspectors verified that the examinations were conducted in accordance with an approved plant procedure, CEDI-B2R10-RV Head Exam, "Visual Inspection Of Byron Unit 2 Reactor Vessel Head." The inspectors determined that the procedure was appropriate for the examinations.

3. *Were the licensee's examinations adequately able to identify, disposition, and resolve deficiencies?*

Yes, through a review of the examination records, including video tape documentation, and condition report, the inspectors determined that the licensee's examinations were adequate to identify, disposition, and resolve deficiencies.

4. *Were the licensee's examinations capable of identifying the primary stress corrosion cracking phenomenon described in the Bulletin?*

The inspectors determined through interviews with inspection personnel, reviews of procedures, including video tape documentation of the examinations, that the licensee's efforts were capable of identifying the results of the phenomenon described in the Bulletin.

5. *What was the condition of the reactor vessel head (debris, insulation, dirt, boron from other sources, physical layout, viewing obstructions)?*

The Byron Station reactor head has three-inch mirror insulation installed with overlapping joints in an interwoven pattern. The insulation is installed in a flat field across the top of the reactor head and is stepped down as it approaches the outer perimeter of the reactor head. The minimum vertical clearance between the vessel head penetrations and the insulation is approximately 1.5-inches at the apex of the head, with clearance increasing towards the periphery of the head and service structure. The inspectors also determined through discussions with the inspection personnel and viewing of the videotape of the inspection that the as-found pressure vessel head condition was relatively clean, with no viewing obstructions to the exam. The inspection personnel fully examined the 79 pressure vessel head penetrations (53 control rod drive nozzles, 18 spare control rod drive nozzles, five in-core thermocouple nozzles, two reactor vessel level indication system nozzles all equally sized (approximately four inches diameter), plus the one-inch head vent. The center to center distance between most penetrations is approximately 12".

The inspection personnel identified boron residue at the bottom and along the length of nozzles numbers 14, 37, and 61 between the insulation and the reactor head (AR#00124013, B2R10 Reactor Head Examination Indications, September 22, 2002). The residue was not due to an active leak, and was cleaned from the reactor head and nozzles.

6. *Could small boron deposits, as described in the bulletin, be identified and*

characterized?

The inspectors verified, through interviews with inspection personnel and review of the video tape and photographic record of the examination, that small boron deposits, as described in the Bulletin, could be identified given the cleanliness and accessibility of the pressure vessel head penetrations.

7. What materiel deficiencies (associated with the concerns identified in the bulletin) were identified that required repair?

None.

8. What, if any, significant items that could impede effective examinations and/or ALARA issues were encountered?

The inspectors verified that there were no impediments to the examinations. Radiation dose received as a part of the examinations was 2.329 person-rem.

3. Findings

No findings of significance were identified.

4OA6 Meetings

.1 Exit Meeting

The inspectors presented the inspection results to Mr. Rich Lopriore and other members of licensee management at the conclusion of the inspection on October 4, 2002. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

.2 Interim Exit Meetings

Interim exits were conducted for:

- Emergency Preparedness program and performance indicators inspection with Mr. S. Kuczynski on July 26, 2002.
- Inservice Inspections and Temporary Instruction 2515/145 inspection with Mr. R. Lopriore on September 27, 2002.
- Radiation Protection inspection with Mr. R. Lopriore on September 27, 2002

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KEY POINTS OF CONTACT

Licensee
C. Crane, Exelon Senior Vice President
R. Lopriore, Site Vice President
S. Kuczynski, Plant Manager
B. Altman, Maintenance Manager
C. Brown, Emergency Preparedness Coordinator
D. Combs, Site Security Manager
D. Goldsmith, Radiation Protection Director
B. Grundmann, Regulatory Assurance Manager
D. Hoots, Operations Manager
W. Kolo, Work Management Director
S. McCain, Exelon Corporate Emergency Preparedness Manager
T. Roberts, Engineering Director

Nuclear Regulatory Commission
C. Khan, Senior Materials Engineer, NRR/DE/EMCB
P. Lougheed, Senior Reactor Inspector
S. Burgess, Senior Reactor Analyst
K. Karwoski, Senior Level Advisor for Steam Generators and Material Inspection
E. Murphy, Senior Materials Engineer
A. Stone, Chief, Projects Branch 3, Division of Reactor Projects

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-454/455/02-06-01	NCV	Adequate Acceptance Criteria for Generic Letter 89-13 Heat Exchanger Inspections
50-454/02-06-02	FIN	Operator Failed to Communicate Abnormal Indications While Attempting to Shut a Primary Sample System Containment Isolation Valve
50-455/02-06-03	NCV	Failure to Manage Shutdown Risk associated with Switchyard Activities during Reduced RCS inventory

Closed

50-454/455/02-06-01	NCV	Adequate Acceptance Criteria for Generic Letter 89-13 Heat Exchanger Inspections
50-455/02-06-02	FIN	Operator Failed to Communicate Abnormal Indications While Attempting to Shut a Primary Sample System Containment Isolation Valve

50-455/02-06-03	NCV	Failure to Manage Shutdown Risk associated with Switchyard Activities during Reduced RCS inventory

Discussed

None

LIST OF ACRONYMS USED

AFW	Auxiliary Feedwater
ALARA	As-Low-As-Reasonably-Achievable
ANS	Alert and Notification System
ASME	American Society of Mechanical Engineers
BAP	Byron Administrative Procedure
BFP	Byron Fuel Handling Procedure
BGP	Byron General Operating Procedure
BOP	Byron Operating Procedure
BOSR	Byron Operating Surveillance Requirement Procedure
BVP	Byron Technical Procedure
BVSR	Byron Technical Surveillance Requirement Procedure
CFR	Code of Federal Regulations
CR	Condition Report
DEP	Drill and Exercise Performance
ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
EP	Emergency Preparedness
EPRI	Electric Power Research Institute
ERO	Emergency Response Organization
HRA	High Radiation Area
HRSS	Highly Radioactive Sampling System
HSAS	Homeland Security Advisory System
IMC	Inspection Manual Chapter
ISI	In-service Inspection
LCOAR	Limiting Condition for Operation Action Requirement
NCV	Non-Cited Violation
NSP	Nuclear Station Procedure
OD	Operability Determination
OHS	Office of Homeland Security
PORC	Plant Operations Review Committee
PRA	Probabilistic Risk Assessment
PWR	Pressurized Water Reactor
RCA	Radiologically Controlled Area
RCS	Reactor Coolant System
RP	Radiation Protection
RWP	Radiation Work Permit
RIS	Regulatory Information Summary
SDP	Significance Determination Process
SSC	System Structure or Component
SX	Essential Service Water
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
US	Unit Supervisor
USNRC	United States Nuclear Regulatory Commission
VHRA	Very High Radiation Area
WO	Work Order
WR	Work Request

LIST OF DOCUMENTS REVIEWED

1R04 Equipment Alignment

	Byron Station Technical Specifications	
	Byron/Braidwood Stations Updated Final Safety Analysis Report (UFSAR)	
Action Tracking Report 106267	Operations Plant Status and Configuration Control events	July 5, 2002
Condition Report (CR) B2001-01250	Inadequate Corrective Actions Specified in Previous CR	March 22, 2001
CR B2001-01292	2B Diesel Generator Starting air System Valve Found Out of Position	March 26, 2001
CR B2001–02055	AB Monitor Tanks Cross-tied	May 2, 2001
CR B2001–03058	Mispositioned Valve Found at Unit 1 Boric Acid Skid	July 11, 2001
CR B2001-01250	Inadequate Corrective Actions Specified in Previous CR	March 22, 2001
CR 00075173	2AF005D Controller at Unit 2 Remote Shutdown Panel Found Out of Position	September 13, 2001
CR 00094472	Fuel Assembly Misplaced in New Fuel Storage Vault	February 8, 2002
CR 00100716	Loss of Start Capability of 2A Feedwater Pump	March 24, 2002
CR 00106267	Adverse Trend in Ops Plant Status and Configuration Control Events	May 6, 2002
CR 00107725	Trouble Opening 2A Feedwater Pump Suction Valve	May 11, 2002
CR 00110083	Wrong Unit Error - Instrument Maintenance Department Fire Protection Surveillance	May 30, 2002
Byron System Operating Procedure (BOP) AF-M1A	Auxiliary Feedwater System Train “A” Valve Lineup	Revision 3
BOP CS-E2	Containment Spray System Unit 2 Electrical Lineup	Revision 3
BOP SX-M1A	Unit 1, Train B, Essential Service Water Valve Lineup	Revision 3

BOP SX-M2A	Unit 2, Train B, Essential Service Water Valve Lineup	Revision 3
BOP SX E1A	Unit 1, Train B, Essential Service Water Electrical Lineup	Revision 2
BOP SX E2A	Unit 2, Train B, Essential Service Water Electrical Lineup	Revision 1
BOP SX E3	Unit 0 Essential Service Water System Valve Lineup	Revision 7
Drawing M-37	Diagram of Auxiliary Feedwater System	Revision AV

1R05 Fire Protection

	Byron/Braidwood Stations Fire Protection Report	Revision 19
	Fire Protection Program 9.5.1	
	Byron Fire Protection Report, Section 2.3.8.8, “Unit 1 Mezzanine Floor” (Turbine Building)	Amendment 13
	Byron Station Pre-Fire Plans and Drawings	
	Emergency Response Training Fire Brigade Program	January 1999
Fire Protection Report	Safe Shutdown Equipment and Cables Listed By Fire Zone, Table 2.4-4	
Byron Letter 84-1020	Seismic Supports for Fire Extinguisher Brackets	August 13, 1984
Letter - Sargent & Lundy Engineers	Fire Rating of Structural Steel Beams with Partially Unprotected Areas	August 12, 1988
SAIC Report No. 4563-400-02	Table 2 - Fire Compartment Ignition Frequency Table - Byron	Revision 0
Byron Administrative Procedure (BAP) 1100-7	Fire Prevention for Transient Combustibles	Revision 10
BAP 1100-7A1	Minor Transient Combustibles	Revision 1

Byron General Operating Procedure (BGP) 1100-3	Plant Barrier Impairment (PBI) Program	Revision 17
CR 00111670	Security Contingency Lockers not Fire Rated	June 12, 2002
CR 00117241	Observations from Critique of 7/27/02 Fire Drill	July 27, 2002
CR 00117445	Potential Fireproofing Issue in Unit 2 Diesel Generator Cable Tunnel	July 18, 2002
Nuclear Station Procedure (NSP) OP-AA-201-003	Fire Drill Scenario No. 8	Revision 3
NSP OP-AA-201-003	Fire Drill Performance	Revision 5
Unit 0 Byron Technical Surveillance Requirement Procedure (BVSR) 10.g.8-1	Fire Rated Assemblies Visual Inspection	Revision 2
Work Order (WO) 99275518	Fire Extinguisher Annual Maintenance and Inspections	August 30, 2002
2 Byron Maintenance Surveillance Requirement Procedure FP-4	Portable Fire Extinguisher Annual Inspection/Maintenance	Revision 3

1R07 Heat Sink Performance (71111.07)

NSP ER-AA-340-1002	Service Water Heat Exchanger and Component Inspection Guide	Revision 0
NSP ER-AA-340-1001	Generic Letter 89-13 Program Implementation Instructional Guide	Revision 0
NSP ER-AA-340	Generic Letter 89-13 Program Implementation Procedure	Revision 0
Byron Technical Procedure (BVP) 800-30	Service Water Fouling Monitoring Program	Revision 5
BVP 800-30	Service Water Fouling Monitoring Program	Revision 6

Generic Letter 89-13	Service Water System Problems Affecting Safety-Related Equipment	Supplement 1 April 4, 1990
Focus Area Self Assessment	Heat Sink Performance	May 1, 2001
WO 99215024	2VA08S - Heat Exchanger (HX) Inspection per Generic Letter 89-13	September 19, 2002
WO 99275593	2SX02K - HX Inspection per Generic Letter 89-13	September 19, 2002
WO 99275594	2SX01K - HX Inspection per Generic Letter 89-13	September 19, 2002
WO 99275648	2AF01AB - HX Inspection per Generic Letter 89-13	September 19, 2002
WO 99275649	2AF02AB - HX Inspection per Generic Letter 89-13	September 19, 2002
CR B2001-02520	Inadequate Acceptance Criteria for Generic Letter 89-13 Heat Exchanger Inspections	May 31, 2001
CR 00081816	Lube Oil Cooler Degradation	November 5, 2001
CR 00084018	2B Diesel Generator Jacket Water Heat Exchanger Reversing Head Corrosion	November 26, 2001
CR 00084059	2B Diesel Generator Jacket Water Channel Heads	November 27, 2001
CR 00084260	Degraded Ceramalloy Coating on 2B Diesel Generator Jacket Water Cooler, 2DG01KB-X2	November 28, 2001
CR 00094031	Eddy Current of 1A VP Chiller Not Identified for Performance	February 04, 2002
CR 00110460	NRC Response to Unresolved Item 50-454/455-01-03-01	May 31, 2002
CR 0123498	2B Auxiliary Feedwater Pump Cubicle Cooler Channel Head Degradation	September 19, 2002
CR 00124919 [1]	Issues Identified during USNRC Review of 89-13 HX Inspections	September 26, 2002
CR 00125982 [1]	NSP-ER-AA-340-1002 Does Not Have Clear Acceptance Criteria	October 4, 2002

1R08 Inservice Inspection (71111.07)

	ISI Program Plan, Second Ten-Year Inspection	February 15, 2002
EXE-PDI-UT-2	Ultrasonic Examination of Austenitic Piping Welds in Accordance with PDI-UT-2	March 11, 2002
EXE-ISI-70	Magnetic Particle Examination	February 6, 2002
CR 00100467	Quality Verification Certification Document Enhancements Related to Record Organization and Storage	March 22, 2002
CR 00121158	Nondestructive Examination Procedure Deficiencies	August 30, 2002
CR 00124722	Foreign Material Exclusion (FME) Found in Secondary Side of Steam Generators During B2R10	September 25, 2002
Byron Letter 2002-0065	Byron Station Unit 1 90-Day Inservice Inspection Report For Interval 2, Period 2, Outage 2 (B1R11)	June 27, 2002
NRC Letter	Approval of Relief Request 12R-40 for Application of Risk-Informed Inservice Inspection Program as an alternative to the ASME Boiler and Pressure Vessel Code Section XI Requirements for Class 1 and Class 2 Piping Welds for Byron Station, Units 1 and 2	February 5, 2002

1R11 Licensed Operator Requalification (71111.11)

CR 00117514	Exam Material Found in Unsecured Location Dated July 19, 2002	July 19, 2002
Apparent Cause Evaluation	Uncontrolled Licensed Operator Requalification Training Exam Material Left in the Scantron Machine Area	August 20, 2002
Memorandum	Exam Administrator Limitations	July 31, 2002
SCORECARDS	Examination Activated Observation	August 8, 2002, August 16, 2002 and 2 on August 9, 2002
NSP TQ-AA-201	Examination Security and Administration	Revision 1
NSP TQ-AA-201-0101	Exam Proctor Checklist	Revision 0

Memo #98-005	Examination Security Policy	Revision 8
Policy 98-005	Exam Security Checklist	Attachment C
NSP OP-AA-101-111	Rules and Responsibilities of On-Shift Personnel	Revision 0
NSP OP-AA-103-102	Watchstanding Practices	Revision 0
NSP OP-AA-103-103	Operation of Plant Equipment	Revision 0
NSP OP-AA-103-104	Reactivity Management Control	Revision 0
NSP OP-AA-104-101	Communications	Revision 0
Simulator Scenario BY-46	Respond to an Anticipated Transient Without Scram and Miscellaneous Malfunctions	

1R12 Maintenance Rule Implementation

	Technical Requirements Manual	
	Technical Specifications	
Maintenance Rule Performance Criteria CC1	Component Cooling Water System	
Maintenance Rule Performance Criteria SX2	Ultimate Heat Sink Temperature Control	
Maintenance Rule Performance Criteria SX3	Ultimate Heat Sink Level Control	
CR B2001-01299	0B Essential Service Water (SX) Tower Fan - Unexpected Alarm and Oscillating Amps	March 27, 2001
CR B2001-02592	SX Fan Gearbox Oil Sample Contains High Iron Particulate	June 6, 2001
CR B2001-02986	0G Low Speed SX Fan Failure To Start	July 7, 2001
CR B2001-03207	0C SX Natural Draft Cooling Tower Fan Trip	July 22, 2001
CR B2001-03321	1SX147B Functional Failure	July 27, 2001
CR 00078039	SX Low Speed Fan 0G Failure to Start (Breaker Tripped Open)	October 7, 2001

CR 00089902	Auxiliary Feedwater and SX Make-up Engines Governor Dump Soleniod-operated Valve - Results of Byron Root cause Report	January 10, 2002
CR 00091481	2CC9473B Did Not Go Full Closed During Attempt to Close	January 19, 2002
CR 00103523	Found What Appears To Be 2 Loose Lower Set Screws Associated With The Shaft Seal On The 0A SX Make-up Pump (0SX02PA)	April 15, 2002
CR 00103876	Evaluation of SX Cooling Tower OF Fan Motor Noise and Vibration Data	April 15, 2002
CR 00104086	0B SX Make-up Pump Auto Start During 2SX150B Valve Stroke	April 16, 2002
CR 00104925	0B SX Fan Bolting Torque Values Found Lower Than Specified	April 22, 2002
CR 00105174	Newly Rebuilt SX Fan Motor Improperly Rebuilt By Vendor	April 24, 2002
CR 00109216	2B Component Cooling Water Pump Failed to Start From 2PM06J Control Switch	May 23, 2002
CR 00110752	Indicated Slow Start of 0B SX Make-up Pump From Main Control Room	June 5, 2002
CR 00111838	Void Discovered in SX Cooling Tower Concrete During Repairs	June 13, 2002
CR 00112798	Pin Hole Leak In 1360 Tank fill Line	June 21, 2002

1R13 Maintenance Risk Assessments And Emergent Work Control

Byron Operating Department Policy 400-47	On-Line Risk/Protected Equipment	Revision 2
NSP WC-AA-103	On-Line Maintenance	Revision 4
CR 0078130	Incorrect Probabilistic Risk Assessment (PRA) Risk Information Used in Work Week Analysis	October 8, 2001
CR 00100141	B1R11 Work Slippage Resulting in Unit 2 On-Line Risk Incorrect	March 19, 2002

CR 00101822	PRA System Structure and Component Shutdown Crosstie Assumptions Need Maintenance Rule Expert Panel Review	April 1, 2002
CR 00102971	On-Line Risk Not Properly Evaluated	April 9, 2002
CR 00103721	2B Diesel Generator Limiting Condition for Operation Action Requirement (LCOAR) Time Not Minimized	April 14, 2002
CR 00103205	Unit 2 Online Risk Not Properly Evaluated During B1R11	April 9, 2002
CR 00104787	Potentially Incomplete Risk Assessment of Emergent Condition	April 22, 2002
CR 00108581	Online Risk Not Evaluated for 1B Main Steam Dump Work Extension	May 17, 2002
CR 00109282	Unit 2 Online Risk Evaluations	May 23, 2002
CR 00109418	0C VA Exhaust Fan Out-of-Service, Not Evaluated For Risk	May 22, 2002
CR 00109678	Fire Pump Cooling Water Availability for Diesel Generator Outage	May 28, 2002
CR 00114997	Emergent Online Risk Evaluation Not Performed for Unit 1 Station Air Compressor Trip	July 10, 2002
CR 00115266	PRA Credit For Motor-Operated Valves/Air-Operated Valves Closing to Isolate an Inter-system Loss-of-Coolant Accident	July 11, 2002
CR 00118822	Unnecessary Auxiliary Feedwater Unavailability Due to Lack of Bundling	August 9, 2002
NSP MA-MW-1001	Maintenance Risk Assessment	Revision 0
NSP LS-AA-125-1006	Corrective Action Program Process Expectations	September 2002
NSP WC-AA-103	On-Line Maintenance	Revision 4
NSP WC-AA-104	Review and Screening for Production Risk	Revision 4
NSP WC-AA-104-1001	Human Performance Review Process for High-Risk Maintenance Procedures or Work Packages	Revision 1
NSP ER-AA-600	Risk Management	Revision 2

Regulatory Guide 1.182	Assessing and Managing Risk Before Maintenance Activities at Nuclear Power Plants	May 2000

1R14 Personnel Performance During Non-routine Plant Evolutions

CR 00120887	Potential Unanalyzed Condition Re: Steam Line Break Analysis	August 28, 2002
2BGP 100-4	Power Descension	Revision 17
2BGP 100-5	Plant Shutdown and Cooldown	Revision 30
NSP OP-AA-101-111	Rules and Responsibilities of On-Shift Personnel	Revision 0
NSP OP-AA-103-102	Watchstanding Practices	Revision 0
NSP OP-AA-103-103	Operation of Plant Equipment	Revision 0
NSP OP-AA-103-104	Reactivity Management Control	Revision 0
NSP OP-AA-104-101	Communications	Revision 0

1R15 Operability Evaluations

	Technical Specifications	
	UFSAR	
	Shift Manager Log	May 13, 2002
Byron Inservice Testing Bases Document	Pressurizer Liquid To Highly Radioactive Sampling System (HRSS) SCP PS29J Inside Containment	
Byron Inservice Testing Bases Document	Pressurizer Liquid To HRSS SCP PS29J Outside Containment	
Byron Inservice Testing Bases Document	Reactor Coolant To HRSS SCP PS29J Inside Containment Isolation	
Operability Determination (OD) 02-009	Leakage of SI8819 Check Valves Pressurizing Safety Injection Pump Discharge Lines	Revision 0

OD 02-012,	1A Reactor Containment Fan Cooler Elevated Vibration Levels	July 17, 2002
CR 00107104	Elevated (acceptable) Closed Stroke Time for 2PS9355B	June 6, 2002
CR 00107967	Sample Valve 1PS9355A Does Not Indicate Closed	May 13, 2002
CR 00109300	Poor Coordination Between Troubleshooting and Post Maintenance Testing	May 23, 2002
CR 00110332	Containment Isolation Valve Failing Closed	June 2, 2002
CR 00110778	Leakage of SI8819 Check Valves Pressurizing Safety Injection Pump Discharge Lines	Revision 0
CR 00111294	Installed Relief Valves 2PS9556A/B Failed Testing	June 10, 2002
CR 00111360	Unit 2 Reactor Coolant Sample Not Collected	June 10, 2002
CR 00112328	Air-Operated Valves May Not Fail to Safe Position on Loss of Instrument Air Due to Regulator	June 18, 2002
CR 00120436	Unexpected Steam Generator Chemistry Excursion	August 22, 2002
CR 00122493 [1]	Remote Shutdown Panel Elevated Room Temperature Questions	September 11, 2002
Byron Station Root Cause Report	1BOL 6.3 Not Entered When 1PS9355A Exhibited Closed Indication Problems	July 1, 2002
Work Order Selection Prompt	AOVA 9355A (Unit 1)	June 7, 2002
Work Order Selection Prompt	AOVA 9355B (Unit 1)	June 7, 2002
Work Order Selection Prompt	AOVA 9356A (Unit 1)	June 7, 2002
Work Order Selection Prompt	AOVA 9356B (Unit 1)	June 7, 2002
Work Order Selection Prompt	AOVA 9355A (Unit 2)	June 7, 2002

Work Order Selection Prompt	AOVA 9355B (Unit 2)	June 7, 2002

1R17 Permanent Plant Modifications

	Technical Specifications	
	Upgraded Final Safety Analysis Report	
Modification Approval Letter DCP# 9400204	Emergency Diesel Generator Governor Upgrade	October 17, 1997
BAP 1310-8T1	Special Procedures/Tests/Experiments Request Form	Revision 7
Procedure NEP-04-03	10CFR50.59 Safety Evaluations	Revision 0
Nuclear Station Work Procedure -A-04	Validation of Previously Performed Safety Evaluations and Screenings	Revision 0
Work Package No. 96113647-03	DCN # BYR0006909E Rev. 10/17/1997	Revision 0

1R19 Post Maintenance Testing

	Byron/Braidwood Stations UFSAR	
	Byron Station TS	
BAP 1310-8TI	Special Procedures/Tasks/Experiments Requests Form	Revision 7
BOP CV-3	Filling and Venting the Chemical and Volume Control System	Revision 13
BOP EH-11	Digital Electrical Hydraulic Control (DEHC) Operations	Revision 1
BOP DG-1	Diesel Generator Alignment to Standby Condition	Revision 9
BOP DG-11	Diesel Generator Startup	Revision 17
BOP DG-12	Diesel Generator Shutdown	Revision 16
BOP RH-3	Fill and Vent of the Residual Heat Removal System	Revision 19
BOP RH-6	Operation of the Residual Heat Removal System in Shutdown Cooling	Revision 25

BOP RH-11	Securing the Residual Heat Removal System From Shutdown Cooling	Revision 16
Unit 2 Byron Operating Surveillance Requirement Procedure (BOSR) 8.1.11-2	Unit 2B Diesel Generator Sequence Test, 18 Month	Revision 1
Work Request (WR) 00058257	Diesel Generator Room 2B Vent Fan 2V D01CB Breaker	July 18, 2002
WR 0059652	Complex Troubleshooting - Prior to Event: Steady State- 100 percent Power-DEHC in Auto Mode	July 31, 202
WO 000467042-01	Control Power Lost Upon Securing Fan 2AP1ZE-J	July 18, 2002
WO 00470840	DEHC Control Panel	August 3, 2002
CR 00115243	Loss of Control Power to 2VD01CB Causes LCOAR Entry	July 18, 2002
CR 00117597	Failure of Unit 1 DEHC Control Display	July 31, 2002
CR 00119741	0BVSR 7.10.2-2 0A VC Make-up System Operability Test Failure	August 19, 2002
Special Plant Procedure-02-005	R/O; 2B Diesel Generator Governor Upgrade Setup and Construction Test	Revision 0
WO 00412257	Task Instructions	
WO 00444666	1AF01PB 1B Auxiliary Feedwater Pump ASME Surveillance (2 VC Trains Required Operable)	August 13, 2002
WO 99285127	Replace Drain Line	August 13, 2002
WO 9928512701	Replace 1B SX Pump Strainer Drain Line, and valve 2WE010B	Completed August 12, 2002
WO 9921105901	Replace 1B Diesel-Driven Auxiliary Feedwater Pump 1B Battery Charger Control Card	August 13, 2002
WO 00403354	1B Auxiliary Feedwater Pump Diesel Tachometer Reading Higher Than Actual	August 13, 2002
WR 00444169	Diesel Driven Auxiliary Feedwater Pump Quarterly Surveillance	August 15, 2002, Revision 7

WR 99002670801	0A Control Room Make-up System Charcoal Absorber Bank Operability Test	December 14, 2000
WO 389028	0SX138B Remains Full Open With 1B and 2B SX Pumps	December 12, 2001
0BVSR 7.10.2-2	0B Control Room Make-up System Charcoal Absorber Bank Operability Test Performed on July 10, 2002	Revision 2
0BVSR 7.10.2-2	0A Control Room Make-up System Charcoal Absorber Bank Operability Test Performed on August 19, 2002	Revision 2
0BVSR 7.10.2-2	0A Control Room Make-up System Charcoal Absorber Bank Operability Test Performed on August 20, 2002	Revision 2
2BVSR 5.5.8.SX.1-2	Test of the 2B Essential Service Water Pump and Discharge Check Valve	Revision 3

1R20 Refueling and Outage Activities

	B2R10 Issues Open Items	
	B2R10 Scope Changes	
	Technical Specifications	
	Updated Final Safety Analysis Report	
	List of Work Removed From B2R10 Between Scope Freeze and Outage Start	
	B2R10 Issues Completed	
	Byron Station U-2 - Open Operability Determination Status	Revision September 24, 2002
	B2R1- Shutdown Safety Analysis	September 5, 2002
	Switchyard Work Checklist	September 27 - September 30, 2002
	Shift Manager Log	September 27, 2002
Plant Operations Review Committee (PORC) Package	B2R10 Shutdown Safety Plan	September 5, 2002

NUREG-1022	Event Reporting Guidelines, 10 CFR 50.72 and 50.73	Revision 2
BAP 370-3	Administrative Control During Refueling	Revision 31
Byron Fuel Handling Procedure (BFP) FH-4	Fuel Movement in Spent Fuel Pool	Revision 12
BFP FH-5	Fuel Movement in Containment	Revision 12
BFP FH-12	Operation of the Spent Fuel Pool Bridge Crane	Revision 11
BFP FH-14	Operation of Refueling Machine	Revision 15
2BGP 100-1T2	Mode 5 to 4 Checklist	Revision 12
2BGP 100-1T3	Mode 4 to 3 Checklist	Revision 14
2BGPP 100-1T5	Containment Integrity Checklist	Revision 10
Byron Maintenance Procedure 3118-3	Reactor Vessel Upper Internals Removal	Revision 14
2BOSR z.5.b.1-1	Unit 2 Containment Loose Debris Inspection	Revision 2
2BOSR 4.3.1-1	Unit 2 Reactor Coolant System Pressure/Temperature Limit Surveillance	Revision 4
Regulatory Guide 1.33	Quality Assurance Program Requirements (Operation)	Revision 2
Byron Work Control Policy Memo 200.09	Online Management of Risk Sensitive Work	June 12, 2001
Westinghouse Technical Bulletin NSD-TB-87-02	Head “O” Ring Leakage	Revision 2
NSP MA-AA-716-008	Foreign Material Exclusion Program	Revision 0
NSP OU-AA-103	Shutdown Safety Management Program	Revision 1
NSP OU-AP-104	Shutdown Safety Management Program Byron/Braidwood Annex	Revision 5
CR 00102684	B1R11 Outage Concerns	March 11, 2002
CR 00119358	Common Cause Results for CR 102684 - B1R11 Ops Issues	August 14, 2002
CR 00117625	Removal of 2FW009C from B2R10	July 31, 2002

CR 00124395 [1]	NRC Inspector Discussion & Question of FME Practices	September 24, 2002
CR 00124722	FME Found in Secondary Side of Steam Generators During B2R10	September 25, 2002
CR 00124999 [1]	NRC B2R10 Close Out Walk Down of Containment	September 29, 2002
CR 00123496	Eagle Timer Relay T6A in 2PA13J Failed to Operate	September 18, 2002
CR 00124088	Shutdown risk comments B2R10 to date	September 23, 2002
CR 00124902	Prompt Investigation: Unit 2 Shutdown Risk Challenged by Switchyard Activities	September 27, 2002
CR 00125833 [1]	Possible Reportable Issues Related to Mode Specific CRs	October 3, 2002
Contingency Plan B2R10 CP-10	Reactor Coolant System Inventory at the Flange	September 18, 2002
DCR 338169	50.59 Review	January 11, 2001
NSP MA-AA-716-008	Foreign Material Exclusion Program	Revision 0
Procedure NF-AA-100	Reload Control Procedure	Revision 0
NSP OP-AA-108-108	Unit restart Review	Revision 0
PORC #02-048	B2R10 Mode 4 Startup NSP (Process for Mode Change) OP-AA-108-108	September 26, 2002
WR 66533	Dried Boron on Valve Stem of PS9350B	September 27, 2002
WR 66514	Penetrations for Instruments 2PT-PC005, 2PT-935, 2PT-936 Contain Wood Piece in Containment	September 27, 2002
WR 66523	Box 2VQ12JC Missing a Clip and Screw Assembly on Top	September 27, 2002
WR 66535	2JB540R Missing Screw in Lower Left Corner	September 27, 2002
WR 66510	Incore Cabinets Have Screws that are Loose	September 27, 2002
WR 66531	Dried Boron Found on 2RC5434B and Below Grating	September 27, 2002
WR 66542	2CC50AC Pipe Has Surface Rust Needs Painting	September 27, 2002

WO 00430377	2CV8378A Disassembly Inspection	September 21, 2002
WO 00430396	2CV8378B Disassembly Inspection	September 21, 2002
Clearance Order 9205	DC 111 to DC 211 cross tie	September 17, 2002

1R22 Surveillance Testing

	Technical Specifications	
	Updated Final Safety Analysis Report	
CR 00119240	Missed Technical Specification Surveillance 2CS010B	August 13, 2002
CR 00123283	Procedure Improvements for 2BOSR 6.3.8-1	September 17, 2002
CR 00123286	Post Job Critique if 2BOSR 3.2.9-1/2 Surveillance	September 19, 2002
CR 00123339	P4 Feedwater Isolation Received During 2BOSR 3.2.9-1	September 19, 2002
CR 00123652	Typographical Error on Procedure Data sheet in 2BVSR 5.5.8.SI	September 19, 2002
CR 00123656	Erroneous Expected Value in Procedure 2BVSR 5.5.8.SI.2-1	September 19, 2002
CR 00123865	Surveillance Results Appear to Indicate High CV Pump Flow	September 20, 2002
1BOSR 0.5-2.CS.1-1	Unit 1 Train A Containment Spray System Valve Stroke Test	Revision 2
1BOSR 8.1.2-2	Unit 1 1B Diesel Generator Operability Surveillance Test	Revision 11
2BOSR 6.3.6-1	Unit 2 Primary Containment Type C Local Leakage Rate Tests of Containment Miniflow Purge Isolation Valves (VQ)	Revision 4
2BOSR 3.2.9-2	Train B Manual Safety Injection Initiation and Manual Phase A Initiation Surveillance	Revision 11
1BOSR 3.1.5-2	Train B Solid State Protection System Bi-Monthly Surveillance	Revision 12
2BVSR 5.5.8.SX.1-2	Test of the 2B Essential Service Water Pump and Discharge Check Valve	Revision 3

WO 00435618	Stroke Test 1CS001A, 1CS009A, 1CS019A, & BT 1CS020A	July 1, 2002
WO 00435122	ASME Surveillance Requirements For SX Pump	June 19, 2002
WO 00491092	Summation of Type B and C Local Leak Rate Tests for Acceptance CR	September 28, 2002
WO 99276897-01	2BOSR 3.2.9-2 Train B Manual Safety Injection and Phase A Initiation	September 17, 2002

1R23 Temporary Plant Modifications

NOA-BY-02-1Q	Nuclear Oversight Continuous Assessment Report, Byron Nuclear Power Station	April 29, 2002
CR B2001-03217	Unauthorized Temporary Modification Installed to Provide Cooling to the Miscellaneous Electrical Equipment Room	July 23, 2001
CR B2001-03374	Unauthorized Temporary Modification	August 2, 2001
CR 00078478	Unauthorized Temporary Modification Installed at Air Dampers	October 10, 2001
CR 00080266	Unauthorized Temporary Modification Installed on Door 0DSSD171	October 24, 2001
CR 00080828	Inspector Comments	October 29, 2001
CR 00084217	0WM2038 Denim Water Supply Valve Has Too Much Hanging On It	November 28, 2001
CR 00092124	Inappropriate Authorization of an Installed Temporary Change	January 24, 2002
CR 00093890	Unapproved Temporary Modification Installed at 0VS03C Plenum Doors	February 4, 2002
CR 00096463	1DO22M Filter Cartridges	February 23, 2002
CR 00100750	Unauthorized Alteration of Plant Equipment, 0VS03C (Repeat)	March 24, 2002
CR 00104152	Adverse Trend in Unauthorized Temporary Modifications	April 16, 2002
CR 00117281	Unauthorized Cable Attached to SX Cooling Fan Motor	July 25, 2002

CR 00117919	Potential Temporary Modification Without Proper Paper	August 1, 2002
Engineering Change # 336844	Provide Temporary Setpoint Band Change for Underfrequency Relay 0SSL-SY077 to Main Control Room Annunciator 0-35-F5	Revision 0
Engineering Change # 333751	Install A3 Cable to the A4 Preamplifier at the 2NR-13 (Post Accident Neutron Monitoring System)	Revision 0
NSP CC-AA-112	Temporary Configuration Changes	Revision 5
NSP CC-MW-112-1001	Temporary Configuration Change Packages	Revision 0

1EP2 Alert and Notification System (ANS) Testing

	Byron Off-site Siren Test Plan	Revision 3
	Byron Monthly Siren Availability Reports 2001-2002	
	Siren Daily Operability Data Sheets 2001-2002	
	Exelon Semi-Annual Siren Report July 1-December 31, 2001	

1EP3 Emergency Response Organization (ERO) Augmentation Testing

	June 19, 2001 Off-Shift Augmentation Drill	June 25, 2001
	Re-Demonstration Off-Shift Augmentation Drill	June 25, 2001
	December 13, 2001, Augmentation Drill Report	December 14, 2001
	May 29, 2002, Augmentation Drill Report	May 30, 2002
	ERO Duty Roster	July 12, 2002
Section N.2	Exelon Nuclear Radiological Emergency Plan	Revision 11
TE-001	Respiratory Qualifications Report	July 25, 2002

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies

	Training Records for Licensed Operator Requalification Training and Dec Makers	
	Byron Station Emergency Preparedness (EP) Program Assessment Report	July 19, 2002
NSP EP-AA-122	Exercises and Drills	Revision 1
NSP EP-AA-122-1001	Drill Development, Conduct, and Evaluation	Revision 0
NSP EP-AA-122-1002	Drill Development, Conduct and Evaluation	Revision 0
NSP LS-AA-125	Corrective Action Program Procedure	Revision 3
Memorandum	2001 Exercise Findings and Observation Report	December 26, 2001
NOA-BY-01-4Q	Nuclear Oversight Continuous Assessment Report Byron Station October-December 2001	January 30, 2002
0076173/32	Nuclear Oversight Field Observation Report: Offsite Interface	January 03, 2002
CR B200100279	Potential USNRC Performance Indicator Data Discrepancy	January 19, 2001
CR B200100302	EP Focus Area Self-Assessment Recommendations for Improvement	January 22, 2001
CR B200102409	Generating Station Emergency Plan Environs Radio Problems With Emergency Off-site Facility	May 22, 2001
CR B200103397	Table Top Drill Issues Lead to Missed Performance Indicator Opportunity.	August 3, 2001
CR 00074467	Emergency Action List HA5 Needs Clarification	September 6, 2001
CR 00082588	Areas for Correction From October 31, 2001 Pre-Exercise	November 12, 2001
CR 00084351	Siren Monthly Reporting Data	November 29, 2001
CR 00086929	Byron Marginally Successful Augmented Drill December 13, 2001	December 14, 2001

CR 00087866	Areas for Correction From November 28, 2001 Exercise	December 21, 2001
CR 00089792	Severe Accident Management Guidelines	January 10, 2002
CR 00102426	Re-submittal of ANS (Siren) Reliability Performance Indicator Data	April 4, 2002
CR 00102878	Communication Drill Failures April 8, 2002	April 8, 2002
CR 00104314	EP Performance Indicator for Drill and Exercise Performance (DEP) Less Than 95 percent	April 16, 2002
CR 00106461	EP Performance Indicator for DEP Remains Less Than 95 percent	May 2, 2002
CR 00106490	Declining Trend for Corp ERO Participation Affects Site Performance Indicator	May 2, 2002
CR 00116318	EP Training Records Not in TAS	July 19, 2002

1EP6 Drill Evaluation

NEI 99-02	Regulatory Assessment Performance Indicator Guideline	Revision 2
	Byron Station 2002 Integrated Drill Scenario and Associated Information	August 21, 2002
Byron 2002 Integrated Drill	Preliminary Report	August 23, 2002

20S1 Access Control to Radiologically Significant Areas

AR 00099598	Poor Radiation Worker Practices During B1R11	March 15, 2002
AR 00123412	Radiation Worker Practices	September 17, 2002
AR 00124707[1]	Cavity Decontamination Air Sampling	September 25, 2002
BAP 1450-3	Access to Reactor Incore Sump Area	Revision 9
BFP-FH-37	Control of Non-Fuel Items in the Spent Fuel Pool	Revision 3
BRP 6020-2	Radiological Air Sampling Program	Revision 16

RHS-19.1	Radiological Controls for Handling Items and Hanging Activated Parts in the Spent Fuel Pool	Revision 0
RP-AA-460	Controls for High and Very High Radiation Areas	Revision 2

2OS2 As-Low-As-Reasonably-Achievable (ALARA) Planning and Control

AR 00100011	Weakness Identified in Source Term Reduction Program	March 15, 2002
AR 00109992	Deficiencies While [FASA] Performing Focus Area Self Assessment on Source Term Reduction	May 30, 2002
AR 00110773	ALARA Dose Reduction Suggestion	June 6, 2002
AR 00111054	Additional Dose Taken Due to Unit 2	June 7, 2002
AR 00112143	Ineffective Radiation Protection Corrective Actions	June 13, 2002
AR 00113057	Wrong Equipment on Steam Generator Platform Caused Delays and Dose	June 24, 2002
AR 00119505	Radiation Protection ALARA Outage Readiness FASA	February 8, 2002
AR 00120688	Implement Hot Spot Program in Accordance with RP-AA-550-1001	August 27, 2002
AR 00121456	Work on 2CV01DA Exceeded Dose Estimate	September 3, 2002
AR 00123803	Steam Generator Dose Rates	September 20, 2002
AR 00124584	Reactor Services Equipment Not Removed for Cavity Decontamination	September 25, 2002
AR 00124728	Steam Generator Exposure Exceeds Goal	September 20, 2002
AR 00124731[1]	NRC Observations During B2R10 Inspection	September 26, 2002
FASA 2002-006	Focus Area Self Assessment Report, Radiation Protection, Byron Station	May 21 - 23, 2002
FASA 2002-006	Focus Area Self Assessment Report, Radiation Protection, Byron Station	August 6 - 7, 2002
RP-AA-270	Prenatal Radiation Exposure	Revision 2

RP-AA-401	Operational ALARA Planning and Controls	Revision 2
RP-AA-401, Attachment 2	ALARA Plan (for Radiation Work Permit (RP) 10001452))	Revision 2
RP-AA-401, Attachment 2	ALARA Plan (for RWP 10001466)	Revision 2
RP-AA-401, Attachment 2	ALARA Plan (for RWP 10001479)	Revision 2
RP-AA-401, Attachment 2	ALARA Plan (for RWP 10001489)	Revision 2
RP-AA-401, Attachment 7	Work in Progress Review (Completed for radiation work permits nos. 10001439, 10001447, 10001452, 10001475, and 10001489)	Revision 2
RP-AA-403	Administration of the RWP Program	Revision 1
RP-AA-550-1001	Hot Spot and Radiation Source Component Tracking	Revision 0
RP-MW-403-1001	RWP Processing	Revision 0
RWP 10001452	Secondary Side Inspections and Sludge Lance	Revision 0
RWP 10001466	Remove and Install Reactor Head and Upper Internals	Revision 1
RWP 10001479	Reactor Vessel Bottom Incore Area	Revision 3
RWP 10001489	Reactor Cavity Decontamination	Revision 0

4OA1 Performance Indicator Verification

	Byron Monthly Siren Availability Reports October 2001-March 2002	
	Siren Daily Operability Data Sheets October 2001-March 2002	
	Exelon Semi-Annual Siren Report July 1-December 31, 2001	
	Supporting Documentation and Records for DEP October 2001-March 2002	
BCP 300-23	Reactor Coolant or Pressurizer Liquid and/or Grab Sample	Revision 24

BCP 300-37	Degassing Reactor Coolant System	Revision 5
CC #008	NRC Performance Indicator Notebook, Drills, Exercise and Actual Event Performance	
Shift Managers Logs	Selected Portions from July 2001 through June 2002	
	2002 Byron Simulator/Technical Support Center EP Performance Indicator Data - Cycle 2002-4	July 8, 2002
1BOSR 4.13.1-1	Reactor Coolant System Water Inventory Balance Surveillance Process Computer Data Sheets for the Period of July 2001 through June 2002	Revision 3
CR 124276[1]	Step 11 of BCP 300-37 Was Not Performed	September 24, 2001
CR B2001-03130	Work in Progress Delays Out-of-Service, Incurs 4 Minutes of LCOAR Time For 2A Safety Injection Pump	July 17, 2001
CR B2001-03273	Critique of 2A Safety Injection Pump Work Window and Delays Experienced	July 19, 2001
CR B2001-03253	OE12506-Core Alterations Performed With Boration Flow Path Inoperable	July 25, 2001
CR B2001-03406	Emergency Core Cooling System (ECCS) Unavailability Reporting Discrepancies	August 6, 2001
CR 00083620	ECCS Pipe Venting Modification May Not Perform Its Intended Function	November 21, 2001
CR 00083719	ECCS Vent Excessive Gas	November 22, 2001
CR 00097301	Unexpected LCOAR Entry on ECCS Systems	February 28, 2002
CR 00099599	1CV459 As-Found Test Results Outside Allow Accept Criteria	March 15, 2002
CR 00099656	ECCS Full Flow Lessons Learned For B1R11	March 16, 2002
CR 00100059	Possibly Multiple Missed LCOAR Entries	March 20, 2002
CR 00100658	Unit 2 Refueling Water Storage Tank Level Indicator of ~1 percent With Unit 1 Cavity Pump Down	March 22, 2002

CR 00102581	1B CV Pump Casing Leak	April 5, 2002
CR 00110778	Unit 1 Safety Injection Pump Discharge Pressure at Safety Injection Accumulator Pressure	June 5, 2002
CR 00116787[1]	Revised DEP Performance Indicator Data Not Updated in Business Ops Spreadsheet	July 24, 2002
LS-AA-2090	Monthly Performance Indicator Data Elements for Reactor Coolant System Specific Activity	Completed September 2001 through July 2002
NSP LS-AA-2100	Monthly Performance Indicator Data Elements for Reactor Coolant System Leakage", Data for July 2001 through June 2002	Revision June 25, 2001
NSP LS-AA-2110	Monthly Performance Indicator Data Elements for ERO Participation October 2001-March 2002	
NSP LS-AA-2120	Monthly Performance Indicator Data Elements for DEP October 2001-March 2002	
NEI 99-02	Regulatory assessment Performance Indicator Guideline	Revision 2 November 19, 2001
NSP RS-AA-122-113	Performance Indicator - Reactor Coolant System Leakage	Revision 2
RS-AA-122-112	Performance Indicator - Reactor Coolant System Specific Activity	Completed August 6, 2001

4OA5 Other

CR 00124013	B2R10 Reactor Head Examination	September 22, 2002
NSP RS-01-182	Indications Exelon/AmerGen Response to USNRC Bulletin 2001-01, "Circumferential Cracking of Reactor Pressure Vessel Head Penetration Nozzles"	August 31, 2001
NRC Bulletin 2001-01	"Circumferential Cracking of Reactor Pressure Vessel Head Penetration Nozzles" Responses for Byron Station, Units 1 and 2 and Braidwood Station Units 1 and 2	November 14, 2001

[1-] Condition report issued as a result of the inspection