

July 26, 2001

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

SUBJECT: BYRON STATION, UNITS 1 AND 2
INSPECTION REPORT 50-454/01-09(DRP); 50-455/01-09(DRP)

Dear Mr. Kingsley:

On June 30, 2001, the NRC completed an inspection at the Byron Station, Units 1 and 2. The enclosed report documents the inspection findings which were discussed on July 5, 2001, with Mr. R. Lopriore and other members of your staff.

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

Based on the results of this inspection, three issues of very low safety significance (Green) were identified.

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

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

Sincerely,

/RA by Anton Vegel Acting for/

Ann Marie Stone, Chief
Projects Branch 3
Division of Reactor Projects

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

Enclosure: Inspection Report 50-454/01-09(DRP);
50-455/01-09(DRP)

See Attached Distribution

DOCUMENT NAME: G:\BYRO\byron 2001-009 drp.wpd

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

OFFICE	RIII		RIII						
NAME	TTongue:ntp		AMStone						
DATE	07/26/2001		07/26/2001						

OFFICIAL RECORD COPY

cc w/encl: J. Skolds, Chief Operating Officer
C. Crane, Senior Vice President, Midwest ROG
J. Benjamin, Vice President Licensing
H. Stanley, Vice President, Midwest ROG Operations
R. Krich, Licensing Director, Midwest ROG
R. Helfrich, Senior Counsel, Nuclear
DCD - Licensing
R. Lopriore, Site Vice President
S. Kuczynski, Station Manager
P. Reister, Regulatory Assurance Manager
M. Aguilar, Assistant Attorney General
Illinois Department of Nuclear Safety
State Liaison Officer
State Liaison Officer, State of Wisconsin
Chairman, Illinois Commerce Commission

cc w/encl: J. Skolds, Chief Operating Officer
C. Crane, Senior Vice President, Midwest ROG
J. Benjamin, Vice President Licensing
H. Stanley, Vice President, Midwest ROG Operations
R. Krich, Licensing Director, Midwest ROG
R. Helfrich, Senior Counsel, Nuclear
DCD - Licensing
R. Lopriore, Site Vice President
S. Kuczynski, Station Manager
P. Reister, Regulatory Assurance Manager
M. Aguilar, Assistant Attorney General
Illinois Department of Nuclear Safety
State Liaison Officer
State Liaison Officer, State of Wisconsin
Chairman, Illinois Commerce Commission

ADAMS Distribution:

AJM
DFT
GFD
RidsNrrDipmlipb
GEG
HBC
EWC
C. Ariano (hard copy)
DRPIII
DRSIII
PLB1
JRK1

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 50-454/01-09(DRP); 50-455/01-09(DRP)

Licensee: Exelon Generation Company, LLC

Facility: Byron Station, Units 1 and 2

Location: 4450 N. German Church Road
Byron, IL 61010

Dates: May 15 through June 30, 2001

Inspectors: R. Skokowski, Senior Resident Inspector
B. Kemker, Resident Inspector
T. Tongue, Project Engineer
N. Shaw, Braidwood Resident Inspector
J. Belanger, Senior Physical Security Inspector
T. Madeda, Physical Security Inspector
P. Loughheed, Reactor Engineer
W. Scott, Reactor Engineer
C. Thompson, Illinois Department of Nuclear Safety

Approved by: Ann Marie Stone, Chief
Projects Branch 3
Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000454-01-09(DRP), IR 05000455-01-09(DRP), on 05/15-06/30/2001; Exelon Generation Company, LLC; Byron Generating Station; Units 1 & 2. Operability evaluations, response to contingency events.

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

A. Inspector Identified Findings

Cornerstone: Barrier Integrity

Green. The inspectors identified that licensed operators failed to correctly evaluate the operability of the Unit 1B reactor containment fan cooler (RCFC) following the inservice test failure of essential service water valve 1SX147B.

This finding was considered more than minor since it has a credible impact on the safe operation of the plant because correctly evaluating operability ensures that sufficient equipment is available to mitigate the consequences of an accident. In this case, the operators did not recognize that the failure of 1SX147B resulted in the associated RCFC being inoperable. This failure to correctly determine operability was evaluated using the SDP and determined to be of very low safety significance since the system failure did not result in an actual reduction of the reactor containment atmosphere pressure control function and the licensee entered this issue into its corrective action program. No violation of NRC requirements occurred (Section 1R15).

Cornerstone: Physical Protection

Green. The inspectors observed that security personnel who participated in the licensee's Stress Fire Weapon Course on May 22, 2001, failed to demonstrate the level of weapon proficiency necessitated by the licensee's established protective strategy plan.

This issue had a credible impact on safety because the purpose of the stress fire course is to demonstrate proficiency in the skills necessary to defend against the design basis threat. The problems identified included a course layout that differed from the licensee's procedure, target identification that differed from the procedure, and completion times that significantly exceeded those specified in the procedure. This finding was evaluated through the SDP and determined to be of very low safety significance because no intrusions had occurred, and there had not been greater than two findings in the last

four quarters. There is no specific requirement for a stress fire course in the licensee's approved security plan; therefore, no violation occurred (Section 3PP3).

Green. The inspectors observed that a portion of one zone of the licensee's perimeter intrusion alarm system was susceptible to penetration as demonstrated by a simulated jump by the licensee using their testing device.

This issue had a credible impact on safety because an adversary must first penetrate the protected area intrusion alarm system by a covert or overt action. Based on the inspectors visual observation, the area in question appeared vulnerable and was tested by the licensee at the request of the inspectors. Repetitive tests by the licensee confirmed that the area could be jumped at approximately four feet. This finding was evaluated through the SDP and determined to be of very low safety significance because no intrusions had occurred, and an adversary would have encountered some level of force on their way to a target set. Additionally, there had not been greater than two findings in the last four quarters.

There is no requirement for this type of test in the licensee's approved security plan. Therefore, no violation occurred. When tested using licensee's test procedure, the system passed. However, the inspectors concluded that the licensee's test procedure was inadequate to identify this type of vulnerability (Section 3PP3).

B. Licensee Identified Violations

A violation of very low significance was identified by the licensee has been reviewed by the inspector. Corrective actions taken or planned by the licensee appear reasonable. The violation is listed in Section 4OA7 of this report.

Report Details

Summary of Plant Status

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

The licensee operated Unit 2 at or near full power until the morning of June 26, 2001, when the reactor was manually tripped in response to a failure of a feedwater regulating valve. The licensee conducted a reactor startup later that same day and synchronized the unit to the grid on June 27, 2001. The unit was operated at or near full power for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather (71111.01)

a. Inspection Scope

The inspectors evaluated the licensee's preparation for adverse weather conditions during the spring and summer months (i.e., high winds and high temperatures), which could potentially lead to a loss of offsite power or a loss of mitigating systems. The inspectors interviewed maintenance, engineering, and operations department personnel; and walked down the electrical switchyard, ultimate heat sink, and other areas of the station potentially affected by high winds and high temperatures. The inspectors also reviewed the licensee's summer readiness assessment, high temperature equipment protection surveillance test and other selected 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 the issues documented in selected condition reports.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

a. Inspection Scope

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

- 125 Volt (V) Direct Current (DC) Buses 112 and 212.

The inspectors verified the out-of-service tagging and subsequent restoration of 125V DC battery charger 112. The activity was selected because the 125V DC distribution system was identified as risk significant in the licensee's risk analysis. The inspectors performed walkdowns of the accessible portions of the system and verified that the system lineup and each of the system operating parameters (i.e., voltage, current, temperature, etc.) were in accordance with the station's operating procedures. During the 112 battery charger outage, the inspectors verified the cross-tie of 125V DC buses 112 and 212 because the loss of either DC bus would result in a significant increase to the respective unit's on-line risk status.

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.

1R05 Fire Protection (71111.05)

a. Inspection Scope

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

- 1A Centrifugal Charging Pump Room (Zone 11.3D-1),
- 1B Centrifugal Charging Pump Room (Zone 11.3G-1),
- 1A Safety Injection Pump Room (Zone 11.3A-1),
- 1B Safety Injection Pump Room (Zone 11.3F-1),
- 1A Residual Heat Removal Pump Room (Zone 11.2A-1), and
- 1A Residual Heat Removal Pump Room (Zone 11.2A-1).

These areas were selected for inspection because risk significant systems, structures, and components were located in the areas. The inspectors reviewed applicable portions of the Byron Station Fire Protection Report and assessed the licensee's control of transient combustibles and ignition sources, material condition, and operational status of fire barriers and fire protection equipment.

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.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

The inspectors evaluated whether the licensee took appropriate precautions to mitigate the risk from external and internal flooding events. Specifically, the inspectors performed the following:

- reviewed the Updated Final Safety Analysis Report (UFSAR) and other selected design basis documents to identify those areas susceptible to flooding;
- performed a walkdown of the river screen house, circulating water pump house, essential service water pump rooms and general plant yard to evaluate whether appropriate flood protection controls were being maintained;
- reviewed selected surveillance tests and maintenance records for watertight doors, flood seal openings and selected instrumentation (such as sump alarms) that help identify flooding events;
- reviewed selected station operating procedures used to identify and mitigate flooding events;
- reviewed training records to determine whether operators were trained to respond to potential flooding events; and
- interviewed selected operating, training, maintenance and engineering staff regarding flood protection controls.

The river screen house and essential service water pump rooms were selected for the plant walkdown based on their susceptibility to flooding events as described in the licensee's design basis documents. The other areas were chosen as part of a random sampling. The walkdown consisted primarily of observing equipment below the postulated floodline, floor and wall penetrations, flood seal openings and watertight doors, and room drains and sumps. During the walkdown of the plant yard, the inspectors observed whether flood protection controls described in the UFSAR, such as an elevation gradient sloping away from buildings and curbs to prevent water intrusion, were maintained.

The licensee's design basis documents for flooding included calculations estimating the maximum water level in safety related areas after a flooding event. These calculations assumed that the source of flooding would be identified and isolated by plant operators within 30 minutes. The inspectors evaluated whether this was a credible assumption while reviewing the station procedures and training records, and interviewing the plant staff.

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.

1R07 Heat Sink Performance-Biennial Review (71111.07)

a. Inspection Scope

A specialist inspector reviewed documents associated with the essential service water cooling tower basins and the reactor containment fan coolers. The essential service water cooling tower basins were chosen for review based on their high risk assessment worth in the licensee's probabilistic safety analysis. Although the reactor containment fan coolers had very low risk, they were chosen for review because they were the only heat exchangers on which the licensee conducted performance testing. While on site, the inspector reviewed completed surveillance tests, and associated calculations, and performed independent calculations to verify that these activities adequately ensured proper heat transfer. The inspector reviewed the documentation to confirm that the test or inspection methodology was consistent with accepted industry and scientific practices, based on review of heat transfer texts and an Electrical Power Research Institute standard (EPRI NP-7552, Heat Exchanger Performance Monitoring Guidelines). The inspector also reviewed documentation to verify that acceptance criteria were consistent with design basis values, as outlined in the Updated Final Safety Analysis Report and Technical Specifications (TSs). The inspector performed a walkdown of the essential service water cooling towers to verify the general material condition of the system and a walkdown of the 2B diesel generator room to verify corrective actions to a previously identified problem.

The inspector reviewed condition reports concerning heat exchanger or heat sink performance issues to verify that the licensee had an appropriate threshold for identifying issues. The inspectors also evaluated the effectiveness of the corrective actions for identified issues, including the engineering justification for operability, if applicable.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification (71111.11)

a. Inspection Scope

The inspectors assessed licensed operator performance and the training evaluators' critique during a licensed operator evaluated training session in the Byron Station operations training simulator on June 4, 2001. The inspectors focused on alarm response, command and control of crew activities, communication practices, procedural adherence, and implementation of emergency plan requirements.

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:

- Containment Isolation Valves,
- Primary Containment Post Accident Monitoring Instruments,
- Feedwater Pumps,
- Post Accident Neutron Monitors, and
- Solid State Protection System and Engineered Safety Features Actuation Circuits.

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 the equipment failures were appropriately evaluated in accordance with the maintenance rule. The inspectors interviewed system engineers and the station's maintenance rule coordinator.

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

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed the licensee's evaluation of plant risk for maintenance activities on the following equipment:

- Battery Charger 112,
- 2B Auxiliary Feedwater Pump, and
- Instrument Power Inverter 113.

The inspectors selected these maintenance activities because they involved systems which were risk significant in the licensee's risk analysis. The maintenance activity associated with the 113 inverter was considered emergent work to make repairs.

During this inspection, the inspectors assessed the operability of redundant train equipment and verified that the licensee's planning of the maintenance activities minimized the length of time that the plant was subject to increased risk. The inspectors also interviewed operations, engineering, maintenance and work control department personnel.

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.

1R14 Personnel Performance During Nonroutine Plant Evolutions (71111.14)

a. Inspection Scope

The inspectors assessed licensed operator performance during the power ascension on June 27, 2001. In particular, the inspectors observed that the rolling and testing of the main generator turbine was performed in accordance with station procedures. The inspectors focused on alarm response, command and control of crew activities, communication practices and procedural adherence.

In addition, the inspectors assessed the licensee's immediate response to an abnormality with the electro-hydraulic oil system pressure that occurred following the turbine trip test. This abnormality momentarily impacted the ability of the feedwater pumps to maintain the desired steam generator levels.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

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

- Operability Evaluation 99-023, "Operation with the Pressurizer Heaters Energized During Normal Operation," Revision 2;
- Operability Evaluation 99-028, "Possible Voiding in Emergency Core Cooling System Injection Lines Due to Safety Injection Accumulator Check Valve Leakage," Revision 4;
- Operability Evaluation 01-007, "2PS9352C Leaks By," Revision 0;

- Operability Evaluation 01-008, "Potential Overstress in the Pedestal and Base Support of the Essential Service Water Pumps," Revision 0; and
- Condition Report B2001-02652, "1SX147B Failed to Open/Stroke Time During Surveillance."

The inspectors interviewed engineering and operations department personnel and reviewed the applicable portions of the Updated Final Safety Analysis Report and TSs.

b. Findings

The inspectors identified a Green finding regarding the failure of licensed operators to correctly evaluate the operability of the Unit 1B reactor containment fan cooler (RCFC) following the inservice test failure of valve 1SX147B. The inspectors concluded that because the valve was repaired and the 1B RCFC was returned to an operable status prior to exceeding the TSs allowed outage time, no violation of NRC requirements occurred. No additional findings were identified with the other operability evaluations reviewed.

On June 11, 2001, 1SX147B failed to open during surveillance testing. The safety function of valve 1SX147B was to open on an engineered safety feature actuation signal, allowing essential service water to bypass the containment chillers and ensuring adequate flow to the 1B RCFC. Subsequent attempts to stroke the valve were successful and by the third attempt the stroke time was within the administrative limits of the Byron Station inservice test program. Following performance of the surveillance test a condition report was written to address the initial test failure. Although the operating shift added the valve to the degraded equipment list, operators did not recognize that the failure of 1SX147B caused the associated RCFC to be inoperable. The 1B RCFC was inoperable because the valve initially failed to open during the surveillance test. The subsequent valve strokes would be considered invalid as a result of preconditioning according to the guidance provided in Information Notice 97-18, "Preconditioning of Plant Structures, Systems and Components Before ASME [American Society of Mechanical Engineers] Code Inservice Testing or TS Surveillance Testing." Without corrective maintenance, the ability of 1SX147B to open in the future was uncertain and therefore, its ability to provide the required essential service water flow to the 1B RCFC during an accident condition was unknown.

In response to the inspectors' questions, the shift operations superintendent acknowledged that the 1B RCFC was inoperable because the subsequent stroke time testing of 1SX147B was preconditioned. The shift manager declared the 1B RCFC inoperable back to the time that the valve had initially failed to open. The solenoid control valve associated with 1SX147B was replaced and 1SX147B was tested satisfactorily prior to exceeding the TS allowed outage time. Since the TS allowed outage time was not exceeded, no violation of NRC requirements occurred.

The failure to correctly identify inoperable equipment has a credible impact on the safe operation of the plant because correctly evaluating operability ensures that sufficient equipment is available to mitigate the consequences of an accident. In this case, the operators did not recognize that the failure of 1SX147B resulted in the associated RCFC being inoperable. The inspectors evaluated the licensee's failure to correctly determine

operability using the significance determination process and concluded that this issue was of very low safety significance (Green) because the failure did not result in an actual reduction of the reactor containment atmosphere pressure control function. The licensee entered this issue into its corrective action program as Condition Report B2001-02697.

1R16 Operator Work-Arounds (71111.16)

a. Inspection Scope

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

- OWA 245 River Screen House Temperature (RSH), and
- OWA 246 Reactor Coolant Pump (RCP) Standpipe Level Controller Malfunction.

The inspectors selected OWA 245 because a low temperature condition in the RSH can affect the operability of the essential service water makeup pumps. The inspectors selected OWA 246 to review a long standing problem with the RCP standpipe makeup valves. The valves are designed to operate in automatic to maintain standpipe level; however, a high level alarm actuates when a valve does not auto close creating a distraction for control room operators and requiring the reactor operator to manually close the valve. The inspectors interviewed operating and engineering department personnel and reviewed applicable 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 the issues documented in selected condition reports.

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing (71111.19)

a. Inspection Scope

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

- 2B Auxiliary Feedwater Pump, and
- 2C Steam Generator Power Operated Relief Valve.

The inspectors selected these post maintenance activities because they involved systems which were risk significant in the licensee's risk analysis.

The inspectors reviewed the scope of the work performed and evaluated the adequacy of the specified post maintenance testing. The inspectors verified that the post maintenance tests were performed in accordance with approved procedures, that the procedures clearly stated acceptance criteria, and that the acceptance criteria were met. During these inspection activities, the inspectors interviewed operations, maintenance, and engineering department personnel and reviewed the completed post maintenance testing documentation.

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.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

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

- Unit 2 Train B ASME Surveillance Requirements for Centrifugal Charging Pump 2B and Chemical and Volume Control System Valve Stroke Test,
- Unit 2 B Diesel Generator 18 Month Surveillance Testing, and
- Unit 2 Engineered Safety Feature Actuation System Instrumentation Slave Relay Surveillance (Train B Automatic Safety Injection - K611).

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

b. Findings

No findings of significance were identified.

3. SAFEGUARDS

Cornerstone: Physical Protection

3PP3 Response to Contingency Events (71130.03)

a. Inspection Scope

The regional physical security inspectors reviewed the current protective strategy including the licensee's target set analysis; observed handgun and rifle requalifications, stress firing with contingency weapons at an off-site firing range; conducted a walkdown of the protected area boundary and alarm system; observed testing of selected protected area alarm zones; evaluated alarm station operator performance and closed circuit television capability; walked down security defensive positions; discussed defense strategy and procedures with licensee security personnel; observed two table top exercises; and reviewed procedures, training records, and licensee drill and exercise critiques pertaining to response to security contingency events.

b. Findings

Two Green findings were identified:

1. Through observation of two security officers' participation in the licensee's stress fire course and interviews with the licensee's security manager and contractor security training manager, the inspectors determined that neither officer demonstrated the level of proficiency required by the licensee's stress fire course procedure (Stress Fire Course Exercise, dated November 1, 2000). Both officers' completion time deviated significantly from the stress fire course requirement by approximately 100 percent. The time period imposed by the procedure closely approximated the time lines used in the licensee's protective strategy. The course was modified by the site security contractor training personnel without full consideration of the essential tasks identified in the licensee's protective plan, in the barrier locations/positions were changed without adequate consideration of the site's protective strategy. Also targets of human figures were not set up in the manner described in the procedure to demonstrate target accuracy.

This issue had a credible impact on safety in that the officers' proficiency to implement weapon stress firing skills were not established. The issue impacted the contingency response key attribute of the Physical Protection Cornerstone. This issue was evaluated through the SDP and determined to be very low safety significance. The finding was determined to be very low safety significance because it did not result in an actual degradation of the licensee's protective strategy. The inspectors noted that there is no requirement for a stress fire weapon course in the licensee's approved security plan, therefore, no violation occurred.

In response to the inspectors' finding, licensee management entered the issue into their corrective action program by the initiation of a Condition Report (B2001-02449). Initial licensee action was to reinforce the standards and expectations of the stress fire course to ensure that officer proficiency was adequately demonstrated in the approved stress fire course.

2. During a walkdown of the perimeter intrusion system (PIDS), the inspectors identified potential vulnerabilities that could be penetrated by individual(s) undetected and used as potential routes of travel to target sets. The inspectors requested that a member of the licensee's security organization test the area utilizing a security device for testing this type of alarm sensor and inserting the device as if to simulate a person attempting to jump over the zone. The sensor did not detect the simulated jump on repetitive tests, resulting in the potential for an individual to enter the protected area undetected.

The inspectors noted that the zone detected satisfactorily in accordance with the licensee's procedures which were based on the manufacturer's recommendations and which met the licensee's approved security plan commitments. Consequently, a violation was not considered. The inspectors concluded that the licensee's test procedure was inadequate to identify this type of vulnerability.

This issue had a credible impact on safety in that an adversary could circumvent the protected area intrusion detection system in this location and enter the protected area undetected. The issue impacted that access control key attribute of the Physical Protection Cornerstone relative to the design of the intrusion detection system. This issue was evaluated through the SDP and determined to be very low safety significance. This finding was determined to be very low safety significance because in a contingency situation, an adversary would encounter defensive positions en route to vital targets. Additionally, the jump over condition was restricted to a small portion of one zone, and the adversary would not know if he had been detected or not.

In response to the inspectors' finding, the licensee entered the issue into their corrective action program (Condition Report B2001-02447). Initial licensee action included the implementation of compensatory measures for the specific zone until repairs could be accomplished to eliminate the jump over condition. Additional proposed solutions identified in the condition report included a review of security test procedure (SY-AA-101-122) for adequacy during the next security manager meeting, make recommendations for enhancement as needed, and share lessons learned with the other Exelon Stations during the weekly conference call meeting.

3PP4 Security Plan Changes (71130.04)

a. Inspection Scope

The inspectors reviewed the following revisions to the Byron Station Nuclear Plant Security Plan to verify that the changes did not decrease the effectiveness of the submitted document:

- Revisions 58, 59, and 60 submitted by licensee letter dated February 5, 2001
- Revision 61 submitted by licensee letter dated March 12, 2001
- Revision 62 submitted by licensee letter dated May 22, 2001

The above changes were submitted in accordance with 10 CFR 50.54(p).

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES (OA)

4OA1 Performance Indicator Verification (71151)

a. Inspection Scope

The inspectors verified the following performance indicators for both units:

- Unplanned Scrams per 7000 Critical Hours,
- Scrams with Loss of Normal Heat Removal, and
- Unplanned Power Changes per 7000 Critical Hours.

The inspectors reviewed each of the licensee event reports from April 2000 to March 2001, determined the number of scrams that occurred, evaluated each of the scrams against the performance indicator definitions, and verified the licensee's calculation of critical hours for both units. The inspectors also reviewed power history data for both operating units from April 2000 to March 2001, determined the number of power changes greater than 20 percent full power that occurred, and evaluated each of those power changes against the performance indicator definition.

b. Findings

No findings of significance were identified.

4OA6 Meetings

Exit Meetings

The inspectors presented the inspection results to Mr. R. Lopriore and other members of licensee management at the conclusion of the inspection on July 5, 2001. The licensee

acknowledged the findings presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

The results of the Physical Security inspection were presented to Mr. R. Lopriore and other members of licensee management at the conclusion of the inspection on May 25, 2001. The licensee acknowledged the findings presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

The results of the Biennial Heat Sink inspection were presented to Mr. S. Kuczynski and other members of licensee management at the conclusion of the inspection on June 8, 2001. The licensee acknowledged the findings presented. The inspector asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

40A7 Licensee Identified Violations. The following finding of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements which meets the criteria of section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as a Non-Cited Violation (NCV).

If the licensee contests the NCV, the licensee should provide a response within 30 days of the date of this inspection report, with the basis for the denial, to the U.S. Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington, D.C. 20555-0001, with copies to the Regional Administrator, Region III; Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Resident Inspector at the Byron Station.

NCV Tracking Number

Requirement Licensee Failed to Meet

NCV 50-455-01-09-01

Technical Specification 5.4.1.a requires, in part, that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Appendix A of Regulatory Guide 1.33, Revision 2, February 1978, specifies hot standby to minimum load (nuclear startup) as an example of a general plant operating procedure. During a Unit 2 plant startup on April 22, 2001, operators failed to have the steam generator preheater bypass valves (2FW039A-D) open to maintain sufficient feedwater flow to the steam generators as required by Unit 2 Byron General Operating Procedure 100-2, "Plant Startup," Revision 20, Step 21e, as the unit entered Mode 1 and a greater amount of steam was being dumped to increase power. This resulted in a steam generator level transient which could have tripped the unit. The licensee entered this occurrence into its corrective action program as Condition Report B2001-01899.

KEY POINTS OF CONTACT

Licensee

D. Combs, Security Manager
D. Drawbaugh, NRC Coordinator
S. Gackstetter, Shift Operations Superintendent
D. Hoots, Operations Manager
M. Karney, Manager, Nuclear Security, Midwest Regional Operating Group
W. Kolo, Acting Work Management Director
S. Kuczynski, Station Manager
R. Lopriore, Site Vice President
P. Reister, Regulatory Assurance Manager
T. Roberts, Engineering Director

NRC

A. M. Stone, Chief, Division of Reactor Projects Branch 3

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-455-01-09-01	NCV	Failure to follow procedure resulted in a steam generator level transient
-----------------	-----	---

Closed

2001-S01-00	SER	Unescorted protected area access granted prior to the completion of pre-access screening due to an inadvertent data entry error caused by a failure to apply human error reduction techniques
-------------	-----	---

50-455-01-09-01	NCV	Failure to follow procedure resulted in a steam generator level transient
-----------------	-----	---

Discussed

none

LIST OF ACRONYMS USED

ASME	American Society of Mechanical Engineers
BGP	Byron General Operating Procedure
BOA	Byron Abnormal 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
DC	Direct Current
DRP	Division of Reactor Projects
EH	Electro-hydraulic
EPRI	Electrical Power Research Institute
ER	Engineering Request
ESF	Engineered Safety Feature
ESFAS	Engineered Safety Feature Actuation System
LCOAR	Limiting Condition for Operation Action Requirement
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NEP	Nuclear Engineering Procedure
NOA	Nuclear Oversight Assessment
NRC	Nuclear Regulatory Commission
NSP	Nuclear Station Procedure
OOS	Out-of-Service
OWA	Operator Work-Around
PARS	Publically Available Records
PIDS	Perimeter Intrusion System
RCFC	Reactor Containment Fan Cooler
RCP	Reactor Coolant Pump
RSH	River Screen House
SER	Security Event Report
SDP	Significance Determination Process
SGTR	Steam Generator Tube Rupture
TRM	Technical Requirements Manual
TS	Technical Specifications
UFSAR	Updated Final Safety Analysis Report
V	Volt
WR	Work Request

LIST OF DOCUMENTS REVIEWED

1R01 Adverse Weather Protection

Unit 0 Byron Operating Surveillance Requirement Procedure (BOSR) XHT-A1	High Temperature Equipment Protection	Revision 4
Nuclear Station Procedure (NSP) OP-AA-101-505	Station Response to Interconnected Grid Status	Revision 0
NRC Information Notice 2000-006	Offsite Power Voltage Inadequacies	March 27, 2000
Licensee Memo	Transmission Planning Studies for Increased Ratings at Byron Station	March 21, 2000
Nuclear Oversight Assessment (NOA)-BY-01-01	Summer Readiness Assessment Report, Byron Nuclear Power Station	April 2 through April 3, 2001
Condition Report (CR) B2001-01142	Unconservative Adverse Weather Entry Conditions	February 25, 2001
CR B2001-01662	Discrepancies Noted in Summer Readiness System Reviews/Plans	April 20, 2001
CR B2001-01666	Summer Readiness Procedure Enhancement	April 13, 2001
CR B2001-01667	2001 Summer Readiness - Review of Condition Reports/Corrective Actions (Operating)	April 13, 2001
CR B2001-02032	Debris, Piping, Old Equipment by Outside Buildings	May 2, 2001

1R04 Equipment Alignment

	Byron Station Technical Specifications	
	Byron/Braidwood Stations Updated Final Safety Analysis Report	
Byron Operating Procedure (BOP) DC-1	125V [Volt] DC [Direct Current] ESF [Engineered Safety Features] Battery Chargers Start-up	Revision 9

BOP DC-2	125V DC Battery Charger Shutdown	Revision 5
BOP DC-7	125V DC ESF Bus Crosstie/Restoration	Revision 9
Out-of-Service (OOS) 990031926	OOS Tagging Package for 125 V DC Battery Charger 112	May 22, 2001
Work Request (WR) 990047955-02	Work Request Package for Post- Maintenance Verification Testing of 125V DC Battery Charger 112	May 22, 2001
Drawing 6E-1-4002F	Single Line Diagram of the 120 Instrument Inverter Bus 112 and 114	July 14, 1976
CR B2000-03956	Valve Mispositioning	December 26, 2000
CR B2001-00326	0B Recycle Transfer Pump Found Running Dead Headed	January 23, 2001
CR B2001-00800	Conflict Between Two OOS Packages	February, 21, 2001
CR B2001-00814	Inadvertent DC Breaker Trip at Switchyard Relay House 125 DC Panelboard	February 22, 2001
CR B2001-00836	Inadvertent Fill of Spent Fuel Pool from Unit 2 Refueling Water Storage Tank	February 24, 2001
CR B2001-00927	2B Feedwater Pump Turning Gear De-energized Prior to Recirculation Valve Being Opened	March 2, 2001
CR B2001-00992	1FW032 Not in Expected Position	March 6, 2001
CR B2001-01748	OOS Valve (2IA069) Found Mispositioned	April 17, 2001
<u>1R05 Fire Protection</u>		
	Byron/Braidwood Stations Fire Protection Report	
CR B2000-02438	Technical Requirements Manual (TRM) Action Requirements Exited Prematurely	September 5, 2000
CR B2000-023690	Surveillance 0BOSR 10.d.3-1 Frequency Violates TRM Requirement	December 5, 2000
<u>1R06 Flood Protection Measures</u>		
	Byron Station Technical Specifications	
	Byron/Braidwood Stations Updated Final Safety Analysis Report	

Unit 0 Byron Abnormal Operating Procedure (BOA) ENV-2	Rock River Abnormal Water Level - Unit 0	Revision 4
1BOA PRI-1	Excessive Primary Plant Leakage - Unit 1	Revision 100
2BOA PRI-6	Component Cooling Malfunction - Unit 2	Revision 100
1BOA PRI-7	Essential Service Water Malfunction - Unit 1	Revision 7
2BOA PRI-7	Essential Service Water Malfunction - Unit 2	Revision 101
	Byron/Braidwood Probabilistic Risk Assessment: Internal Flooding Analysis	Revision 0
Nuclear Engineering Procedure (NEP)-17-03	Structures Monitoring	Revision 1
Calculation 3C8-1281-001	Auxiliary Building Flood Seal Calculation for Byron Units 1 and 2	July 17, 1997
WR 990246744-02	Water Tight Door/Flood Seal Opening Inspection	April 4, 2001
WR 990280426-01	Watertight Door Alarm Battery Replacement and Preventative Maintenance	May 1, 2001
WR 990261534-01	Watertight Door Alarm Battery Replacement and Preventative Maintenance	April 20, 2001
WR 980091552-01	Flood Seal Opening Inspections	March 20, 2000
WR 990201950-01	Auxiliary Building Floor Drain Semi-Annual Inspection	February 8, 2001
Simulator Scenario Number 00-6-5	Licensed Operator Simulator Training Scenario: <i>Loss of Offsite Power and Auxiliary Building Flooding</i>	October 30, 2000
	Licensed Operator Requalification Training Cycle Lesson Plan Number 6	September 8, 2000
	Licensed Operator Requalification Training Lesson Plan: <i>Essential Service Water Malfunction</i>	February 14, 2000
	Licensed Operator Requalification Training Lesson Plan: <i>Component Cooling Water Malfunction</i>	June 1, 2000
	Focused Area Self-Assessment of Flood Protection Measures	March 13 through March 23, 2001

	Focused Area Self-Assessment Report of Flood Protection (Review of the Diesel Oil Storage Tank Rooms)	May 1 through May 10, 2000
	Focused Area Self-Assessment Report of Flood Protection (Review of the Essential Service Water Pump Rooms)	July 21 through August 14, 2000
CR B1999-00921	Diesel Oil Storage Tank Room Flooding Concern	March 17, 2001
CR B2000-01173	Missed Corrective Action–Preventative Maintenance for Floor Drain Check Valves	January 19, 2001
CR B2000-01307	4" Pipe Sleeve Through L-Wall Not Per Design	May 3, 2000
CR B2000-01368	Deficiencies Found During Flooding Self-Assessment	May 10, 2000
CR B2001-00274	Potential Problem With Auxiliary Feedwater Tunnel Flood Protection	January 19, 2001
CR B2001-00691	1SX001B Failed to Stroke Full Closed	February 13, 2001
CR B2001-00332	Generic Flood Protection Concerns	January 24, 2000
CR B2001-01162	Apparent Cause Evaluation Actions Potentially Not Tracked	July 8, 1999
CR B2001-01195	Gang Box and Tool Box Parked on Flood Seal for 1SX001A	March 20, 2001
CR B2001-01494	Flooding Issues Still Unresolved	March 9, 2001
CR B2001-02401 ¹	A Paragraph Was Inadvertently Omitted From the Controlled Copies of the UFSAR	May 22, 2001
CR B2001-02422 ¹	Results of NRC Inspector Walk Down of Flood Seals	May 23, 2001
CR B2001-02431 ¹	Missed Sign-off on Surveillance	May 23, 2001
CR B2001-02445 ¹	NRC Contact Report - Flooding Procedure Meeting	May 24, 2001
CR B2001-02456 ¹	NRC Identified Concerns with Mechanical Maintenance Department Procedure for Repair of Anderson Greenwood Check Valves	May 24, 2001

1R07 Heat Sink Performance

28SW405593	Reactor Containment Fan Coil Service Water Cooling Coils	Revision B
28SW405613	Reactor Containment Fan Coil Mounting Arrangement	Revision 0
28SW405623	Performance Data - Service Water and Chilled Water Coils per Each Reactor Containment Fan Cooler	Revision B
AT 26162	Focus Area Self-Assessment Byron Station Heat Sink Performance	September 1, 2000
AT 43856	Focused Area Self-Assessment Byron Station Generic Letter 89-13 Documentation Adequacy	April 13, 2001
AT40599	Focused Area Self-Assessment Byron Station Heat Sink Performance	May 1, 2001
Unit 0 Byron Technical Surveillance Requirement Procedure (BVSR) SX-5	Inspection of River Screen House and Essential Service Water Cooling Tower Basins	Revision 3
Byron Technical Procedure (BVP) 800-30	Service Water System Fouling Monitoring Program	Revision 4
BYR97-406/ BRW-97-0965-M	Reactor Containment Fan Coil Performance Curve Calculation	October 17, 1997
BYRON-00-5043	Generic Jacket Water Leakage Evaluation for Emergency Diesel Generators	June 2, 2000
CR B1999-04383	River Dredging Permit Has Expired	November 29, 1999
CR B1999-02580	Steam Generator Blowdown Temperature Control Unit Post Maintenance Test Failure	July 14, 1999
CR B2000-00411	Generic Letter 89-13 Trend Database Deficiency	February 7, 2000
CR B2000-00731	Minimum Wall Thickness Violation	March 5, 2000
CR B2000-00908	2B Diesel Generator Jacket Water Heat Exchanger Leak	March 24, 2000
CR B2000-01525	Unplanned Limiting Condition for Operation Action Requirement Entry on 2B Diesel Generator	May 18, 2000

CR B2000-01575	2B Diesel Generator Inoperable Due to Jacket Water Flange Leak	June 2, 2000
CR B2000-01584	One-Third of O-Ring Extruded into 2B Diesel Generator Jacket Water Lower Cooler	June 2, 2000
CR B2000-02340	Ineffective Corrective Actions for 2B Diesel Generator Heat Exchanger Leakage Rework	August 25, 2000
CR B2001-02568 ¹	Conversion Factor Error in Calculation L-VP-04	June 4, 2001
CR B2001-02628 ¹	Incorrect Design Input Was Used for Determining Minimum Wall Thickness	June 8, 2001
Engineering Request (ER) 9907806	Essential Service Water Coolers 0SX03AB and 0SX04AB Repair Recommendations	September 30, 1999
Drawing M-544	Reactor Building Elevation 377'-0" Essential Service Water System	Revision P
Drawing M-900	Outdoor Piping Essential Service Water at Cooling Tower, Sheet 7	Revision AF
Drawing M-900	Outdoor Piping Essential Service Water at Cooling Tower, Sheet 8	Revision AB
Drawing M-900	Outdoor Piping Essential Service Water at Cooling Tower, Sheet 9	Revision T
Drawing M-1253	Reactor Containment Fan Cooler Partial Plan Elevation 377'-0" Vaneaxial Design - Loop 4	Revision S
Drawing M-1263	Reactor Containment Fan Cooler Sections	Revision AN
Drawing S-239	Essential Service Water Cooling Tower Foundation Plan Elevation 868'-3"	Revision J
Drawing S-241	Essential Service Water Cooling Tower Air Inlet Plan Elevation 875'-6"	Revision N
Drawing S-243	Essential Service Water Cooling Tower Fill Support Beam Plan Elevation 888'-0"	Revision J
Drawing S-249	Essential Service Water Cooling Tower, Section 1-1	Revision F
Drawing S-250	Essential Service Water Cooling Tower Section and Details, Sheet 1	Revision P

Drawing S-259	Essential Service Water Cooling Tower Drainage Duct Plan, Sections and Details	Revision F
WR 950078156 01	Unit 2 Heat Exchanger Test for the Reactor Containment Fan Coolers Essential Service Water	April 4, 2001
WR 990091603 01	Essential Service Water Cooling Tower C Cell Inspection per Technical Requirements Manual	November 16, 2000
WR 990203348 01	Diver Inspection of Essential Service Water Cooling Tower South (B) Basin	May 21, 2001
WR 990203347 01	Diver Inspection of Essential Service Water Cooling Tower North (A) Basin	May 25, 2001

1R11 Licensed Operator Requalification

Simulator Scenario Number 01-3 Dynamic 2	Licensed Operator Simulator Training Scenario: <i>Respond to a SGTR [Steam Generator Tube Rupture] and Miscellaneous Malfunctions</i>	May 25, 2001
--	---	--------------

1R12 Maintenance Rule Implementation

NSP ER-3010	Maintenance Rule	Revision 0
	Maintenance Rule Performance Monitoring Data for Criteria PC-4, Containment Isolation Valves, Devices, Thermal Relief Devices, and Integrity	May 1, 1999 through May 9, 2001
	Maintenance Rule Performance Monitoring Data for Criteria PC-5, Provide Primary Containment System Post Accident Monitoring Instruments	May 1, 1999 through May 9, 2001
	Maintenance Rule Performance Monitoring Data for Criteria FW-1, Provide Normal and Alternate Feedwater to the Steam Generators	May 1, 1999 through May 9, 2001
	Maintenance Rule Performance Monitoring Data for Criteria NR-1, Post Accident Neutron Monitors	April 1, 1999 through April 3, 2001
	Maintenance Rule Performance Monitoring Data for Criteria EF-1, Solid State Protection System and Engineered Safety Features Actuation Circuits	April 1, 1999 through April 3, 2001

NUMARC 93-01	Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants	Revision 2
CR B1999-01243	Unplanned LCOAR [Limiting Condition for Operation Action Requirement] Entry Due to Source Range Instrument Inoperability	April 4, 1999
CR B1999-03332	Unit-2 Start-up Feedwater Pump Does Not Rotate Freely	September 26, 1999
CR B2000-01204	1A Feedwater Pump Emergency Availability Lost	April 23, 2000
CR B2000-02583	Apparent Failure of 1PY-MS042A	September 19, 2000
CR B2000-03201	1FW530 Failure to Modulate Feedwater Flow	October 22, 2000
CR B2000-03335	2A DG "B" Air Dryer Filter Split Wide Open at Base Losing Filter Elements	November 4, 2000
CR B2000-03399	Component Failure Due to As-Built Condition	November 9, 2000
CR B2000-03523	2C Overpower Delta T and Block Rod Withdrawal Comparator Found Tripping	November 20, 2000
CR B2000-03561	Unplanned Degraded Equipment Log Entry for 0VA022Y	November 24, 2000
CR B2000-03670	Maintenance Rule Functional Failure Monthly Review for October 2000	December 4, 2000
CR B2000-03729	Unexpected Alarm for 2C Steam Generator 2C Steam Flow Low	December 7, 2000
CR B2000-03837	Failure of Circulating Water Blowdown Valve	December 18, 2000
CR B2000-03891	Blown Fuse in 2PA30J-N6 Group #7	December 21, 2000
CR B2000-03933	Maintenance Rule Functional Failure Monthly Review for November 2000	December 22, 2000
CR B2000-03948	1NI-NR005A Power Range Post Accident Neutron Monitor Failure	December 25, 2000
CR B2000-03968	Broken Instrument Air Connection on 1ES091	December 27, 2000
CR B2001-00094	Numerous Action Requests Dating Back to 1995 Not Fixed Yet in Annunciator Cabinets	January 5, 2001

CR B2001-00095	Operating Surveillance Fails Acceptance Criteria / Potential Workaround	January 5, 2001
CR B2001-00102	1ES091 Failed Open for the Second Time in the Last Two Weeks	January 8, 2001
CR B2001-00107	Appendix R Teledyne Battery Overfilled - Maintenance Rule Functional Failure	January 8, 2001
CR B2001-00158	Unplanned LCOAR Entry for 2RC-0415 Reactor Coolant System Flow Loop Failure	January 12, 2001
CR B2001-00300	Results from Common Cause Analysis of the Process Radiation Monitoring System	January 22, 2001
CR B2001-00374	Maintenance Rule Peer Group Containment Closure Industry Event Review	January 26, 2001
CR B2001-00656	Unplanned LCOAR Entry During Unit 2 "B" Train Solid State Protection System Surveillance	February 12, 2001
CR B2001-01012	1B Feedwater Pump Failed to Trip As Required During Overspeed Testing	March 8, 2001
CR B2001-01462	Source Range Gamma-Metrics Channel "B" Reading High and Erratic	April 27, 2001
CR B2001-01905	Unit 1 Power Distribution Monitoring System Inoperability and Extended Calibration Time of N42	April 23, 2001
CR B2001-02652	1SX147B Failed to Stroke Open/Stroke Time Test During Surveillance	June 11, 2001

1R13 Maintenance Risk Assessments and Emergent Work Evaluation

Byron Operating Department Policy 400-47	On-Line Risk/Protected Equipment	Revision 2
NSP WC-AA-103	On-Line Maintenance	Revision 3
CR B2001-00225	Entered the 1A Diesel Generator Room Without Shift Manager Approval	January 16, 2001
CR B2001-00265	1B Diesel Generator Work Window Delayed Due to Out-of-Service Return-to-Service, Operations Analysis Department Work, and Work Bundling	January 19, 2001

CR B2001-00328	On-Line Risk Inconsistencies With Component Cooling Water Heat Exchangers	January 23, 2001
CR B2001-00329	Missed Opportunity to Minimize High Production Risk	January 24, 2001
CR B2001-00345	Schedule Delay Increases Limiting Condition for Operation Action Requirement Time	January 24, 2001
CR B2001-00354	Risk Evaluation Data Attachments Not Approved During Planning as Required by Procedure	January 25, 2001
CR B2001-00357	Consistent and Effective Use of On-Line Risk Protective Actions	January 25, 2001
CR B2001-00494	Minimum Planning + Minimum Manning = Increased Risk	February 1, 2001
CR B2001-02492 ¹	NRC Question on Surveillance Applicability	May 30, 2001

1R14 Personnel Performance During Non-routine Plant Evolutions

Unit 2 Byron General Operating Procedure (BGP) 100-3	Power Ascension	Revision 30
CR B2001-02870	EH [Electro-Hydraulic] Pressure Anomaly Following Turbine Trip Test During Startup	June 27, 2001

1R15 Operability Evaluations

	Byron Station Technical Specifications	
	Byron/Braidwood Stations Updated Final Safety Analysis Report	
NSP CC-3001	Operability Determination Process	Revision 0
Operability Evaluation 99-023	Operation with the Pressurizer Heaters Energized During Normal Operation	Revision 2
Operability Evaluation 99-028	Possible Voiding in Emergency Core Cooling System Injection Lines Due to Safety Injection Accumulator Check Valve Leakage	Revision 4
Operability Evaluation 01-007	2PS9352C Leaks By	Revision 0

Operability Evaluation 01-008	Potential Overstress in the Pedestal and Base Support of the Essential Service Water Pumps	Revision 0
1BOSR 0.5-3.SX.1-2,	Test of 1B Essential Service Water Miscellaneous System Valves	Revision 4
NRC Information Notice 97-18	Preconditioning of Plant Structures, Systems and Components Before ASME [American Society of Mechanical Engineers] Code Inservice Testing or Technical Specification Surveillance Testing	
Sulzer Pumps (US) Inc. Letter	Submittal of Documents in Support of Essential Service Water Pump Operability	May 17, 2001
CR B2001-02652	1SX147B Failed to Open/Stroke Time During Surveillance.	June 11, 2001
CR B2001-02697 ¹	Inadequate Operability Assessment of 1SX147B Failure	June 13, 2001
CR B2001-02698 ¹	Enhancements Needed in Shift Manager Logging of Risk	June 13, 2001
<u>1R16 Operator Work-arounds</u>		
NSP OP-AA-101-303	Operator Work-Around Program	Revision 0
CR B2000-03389	Plant Process Computer Will Not Support Mixed Park Position	November 8, 2000
CR B2000-03457	Unusual Amount of Turbine Generator Temperature Monitoring System Alarm Activity	November 15, 2000
CR B2000-03532	River Screen House Temperature Low	November 21, 2000
CR B2000-03541	Reactor Coolant Pump Standpipe Overfills Due to Controller Malfunction	November 21, 2000
CR B2000-03818	Possible Operator Workaround	December 15, 2000
CR B2000-03950	Filtered Water Storage Tank Heaters (Operator Workaround)	December 25, 2000
CR B2001-02883 ¹	Filter Water Storage Tank Heater Capacity	June 27, 2001
CR B2001-02907 ¹	Unit One Reactor Coolant Pump Seal #3 Standpipe Main Control Room Alarms and Impact on B1R11 Scope	June 28, 2001
CR B2001-02915 ¹	Corrective Action Process	June 29, 2001

1R19 Post Maintenance Testing

WR 99068558-02	Verify Diesel Starts	June 14, 2001
WR 99068559-02	Verify Diesel Starts	June 14, 2001
WR 99168675-03	Run Gearbox and Check for Leaks	June 14, 2001
WR 99170745-02	Visual Inspection	June 14, 2001
WR 99186829-03	Verify Door Wiring Does Not Interfere	June 20, 2001
WR 99195133-07	U-2 Main Steam System Containment Isolation Valve Stroke Test	June 15, 2001
WR 99195133-10	Seat Leakage Test	June 15, 2001
WR 99279662-03	Visual Inspection	June 14, 2001
CR B2000-03649	Unplanned LCOAR Entry on 1B Auxiliary Feedwater Pump Due to Missed VT-2 Inspection	December 1, 2000
CR B2000-03788	Post Maintenance Test Failure for 2MS018D Hand Pump	December 13, 2000
CR B2000-03815	Failed WR Test For WR970087362 on 1FP5108A	December 15, 2000
CR B2001-00016	High Vibration on the "B" Boric Acid Recycle Monitor Tank Pump	January 2, 2001
CR B2001-01876	Problems Found During Execution of 2BVSR z.7.A.1	April 21, 2001
CR B2001-02696 ¹	Inadequate Post Maintenance Testing Specified for 2C Steam Generator Power Operated Relief Valve	June 14, 2001

1R22 Surveillance Testing

	Byron Station Technical Specifications	
	Byron/Braidwood Stations Updated Final Safety Analysis Report	
2BOSR 3.2.7-611B	Unit Two ESFAS [Engineered Safety Feature Actuation System] Instrumentation Slave Relay Surveillance (Train B Automatic Safety Injection - K611)	Revision 2
2BOSR 8.1.2-2	Unit Two 2B Diesel Generator Operability Monthly (Staggered) and Semi-Annual (Staggered) Surveillance	Revision 5

2BOSR 8.1.14-2	Unit Two 2B Diesel Generator 24 Hour Endurance Run and Hot Restart Test 18 Month	Revision 0
2BVSr 5.2.4-6	Unit 2 Train B ASME Surveillance Requirements for Centrifugal Charging Pump 2B and Chemical and Volume Control System Valve Stroke Test	Revision 4
CR B2000-03919	Preconditioning Issues Delay Performance of Scheduled Activity	December 22, 2000
CR B2001-00014	In-service Test Basis Test Table Not Being Maintained Current	January 2, 2001
CR B2001-00329	Missed Opportunity to Minimize High Production Risk	January 24, 2001
CR B2001-00359	Inadequate Descriptions in Surveillance Steps to Verify Position of Containment Isolation Valves	January 25, 2001
CR B2001-00443	Step in BOP SI-2 Performed Early in Procedure	January 30, 2001
CR B2001-02682	Elevated Vibration Readings on the 2B Residual Heat Removal Pump in the N-S Direction	June 13, 2001

3PP3 Response to Contingency Events

Letter: Byron 2001-0071	Subject: Security Event Report (SER) 454-2001-S01-00	May 7, 2001
Root Cause Evaluation	Unescorted Protected Area Access Was Granted Prior to the Completion of Pre-access Screening	April 19, 2001
Prompt Investigation Report	Unauthorized Protected Area Access Granted Due to Incomplete Pre-Access Screening	April 6, 2001
Incident Report 01-16	Unauthorized PA Access Due to Incomplete Pre-Access Screening	April 5, 2001
CR B2001-02319	Perimeter Intrusion Detection System Evaluation	May 17, 2001
CR B2001-02446	Incomplete Security Drill Paperwork	May 24, 2001
Security Training Program/Lesson Plan	Force on Force Exercises (Appendix C), Revision 00	June 30, 1999

Security Training Program/Lesson Plan	Tabletop Drills/Exercise, Revision 03	February 1, 2001
Security Training Program/Lesson Plan	Stress Fire Course Exercise, Revision 00	June 30, 1999
Strategic Support Agreement	Security/Operations, Revision 00	March 16, 2001
Memorandum To File	Re: Byron Station Periodic Review of Target Sets	April 18, 2001
<u>4OA1 Performance Indicator Verification</u>		
NEI [Nuclear Energy Institute] 99-02	Regulatory Assessment Performance Indicator Guideline	Revision 0
<u>4OA7 Licensee Identified Violations</u>		
	Byron Station Technical Specifications	
2BGP 100-2	Plant Startup	Revision 20
CR B2001-01899	Steam Generator Level Oscillation Near Miss	April 22, 2001

¹ Condition report issued as a result of the inspection.