

October 19, 2000

Mr. Oliver D. Kingsley  
President, Nuclear Generation Group  
Commonwealth Edison Company  
ATTN: Regulatory Services  
Executive Towers West III  
1400 Opus Place, Suite 500  
Downers Grove, IL 60515

SUBJECT: BRAIDWOOD - NRC INSPECTION REPORT 50-456-00-13(DRP);  
50-457-00-13(DRP)

Dear Mr. Kingsley:

On September 22, 2000, the NRC completed the baseline problem identification and resolution inspection at your Braidwood Units 1 and 2 reactor facilities. The results were discussed with Mr. Keith Schwartz and other members of your staff. The enclosed report presents the results of that inspection.

The inspection was an examination of activities conducted under your license as they relate to identification and resolution of problems and compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection consisted of a selected examination of procedures and representative records, observation of activities, and interviews with personnel.

Based on the results of the inspection, there were no findings identified during this inspection. The team concluded that problems were properly identified, evaluated and resolved within the problem identification and resolution program. Also, we concluded that your personnel communicated an acceptable level of responsibility in identifying and entering safety issues into the corrective action program. However, during the inspection, the inspectors found your tracking system to be cumbersome and complex making it difficult to track an item through the corrective action process to completion.

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/*

Michael J. Jordan, Chief  
Reactor Projects Branch 3

Docket Nos. 50-456; 50-457  
License Nos. NPF-72; NPF-77

Enclosure: Inspection Report 50-456-00-13(DRP);  
50-457-00-13(DRP)

cc w/encl: D. Helwig, Senior Vice President, Nuclear Services  
C. Crane, Senior Vice President, Nuclear Operations  
H. Stanley, Vice President, Nuclear Operations  
R. Krich, Vice President, Regulatory Services  
DCD - Licensing  
T. Tulon, Site Vice President  
K. Schwartz, Station Manager  
T. Simpkin, Regulatory Assurance Supervisor  
M. Aguilar, Assistant Attorney General  
State Liaison Officer  
Chairman, Illinois Commerce Commission

DOCUMENT NAME: G:\BRAIBRA2000013DRP.WPD To receive a copy of this document, indicate in the box: "C" = Copy without enclosure "E"= Copy with enclosure "N"= No copy

OFFICE	RIII	C	RIII		RIII		
NAME	Tongue/co		Gardner (N/A)		Jordan		
DATE	10/19/00		10/19/00		10/19/00		

**OFFICIAL RECORD COPY**

ADAMS Distribution:

DTF

GFD (Project Mgr.)

J. Caldwell, RIII w/encl

B. Clayton, RIII w/encl

SRI Braidwood w/encl

DRP

DRSIII

PLB1

JRK1

BAH3

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 50-456; 50-457  
License Nos: NPF-72; NPF-77

Report Nos: 50-456-00-13(DRP); 50-457-00-13(DRP)

Licensee: Commonwealth Edison Company (ComEd)

Facility: Braidwood Nuclear Power Station, Units 1 and 2

Location: 35100 S. Route 53  
Suite 84  
Braceville, IL 60407-9617

Dates: September 11 through September 22, 2000

Inspectors: T. M. Tongue, Projects Engineer  
M. J. Farber, Reactor Engineer  
R. K. Walton, Reactor Engineer  
S. N. Sheldon, Reactor Engineer - Trainee

Approved by: Michael J. Jordan, Chief  
Reactor Projects Branch 3  
Division of Reactor Projects

# NRC's REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) recently revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting and assessing safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

## **Reactor Safety**

- Initiating Events
- Mitigating Systems
- Barrier Integrity
- Emergency Preparedness

## **Radiation Safety**

- Occupational
- Public

## **Safeguards**

- Physical Protection

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margin.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. And RED indicates performance that represents a significant reduction in safety margin but still provides adequate protection to public health and safety.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.

More information can be found at: <http://www.nrc.gov/NRR/OVERSIGHT/index.html>.

## SUMMARY OF FINDINGS

Inspection Report 50-456-00-13(DRP); 50-457-00-13(DRP); on 09/11 - 09/22/00; Commonwealth Edison Company; Braidwood Nuclear Power Station, Units 1 and 2; Annual baseline inspection of the Identification and Resolution of Problems.

This announced 2-week inspection was conducted by three region-based inspectors and one region-based trainee. The purpose was to review the effectiveness of the corrective action program which included the methods used for identification, cause investigation, and correction of quality related problems.

### **Problem Identification and Resolution**

The team identified that the licensee was effective at identifying problems and placing them in the corrective action system. Also, the inspectors concluded that the licensee personnel communicated an acceptable level of responsibility in identifying and entering safety issues into the corrective action program. However, the inspectors identified several examples of minor problems that did not result in any adverse consequences which were similar to problems identified by licensee personnel during recent self-assessments.

The inspectors noted that the tracking system is cumbersome and difficult to follow an issue through to completion. The tracking system for a single action may have numerous entries in the tracking system and several examples of incomplete information resulted in masking the corrective actions. The computerized condition reporting system was not readily used by a number of trades people for lack of an available computer or knowledge of the software. Through interviews the inspectors identified a weakness in the licensee's feedback of condition reports to the originator. The inspectors also identified some examples of corrective actions that were not entered into the system or completed.

The licensee conducted four self-assessments of the corrective action program between March 2000 and the start of this inspection. As of the end of this inspection, licensee personnel had not completed condition report evaluations for findings from these self-assessments. Consequently, the inspectors could not assess the effectiveness of any resultant corrective actions.

## Report Details

### 4. OTHER ACTIVITIES (OA)

#### 4OA2 Problem Identification and Resolution

##### 1. Effectiveness of Problem Identification

###### a. Inspection Scope:

The inspectors reviewed items that pertained to the seven cornerstones of safety-related to the Reactor Safety, Radiation Safety, and Safeguards strategic performance areas to determine if problems were appropriately being identified, characterized, and entered into the corrective action program. Items reviewed included selected condition reports (CR's), (previously known as problem identification forms (PIF's)). The review also included operability evaluations, audits and self-assessments completed in the time period from March 1999 to the present. The inspectors paid particular attention to inspections of three high risk plant systems. These were the 125 Volt dc system including buses 111 and 112, the Auxiliary Feedwater system, and the Component Cooling system. These system inspections included a review of completed corrective maintenance activities, work order backlogs, related condition reports, and system drawings. A listing of the specific documents reviewed during the inspection is attached to this report.

###### b. Issues and Findings:

There were no findings identified in this area. The inspectors determined that the licensee was effective at identifying and appropriately characterizing problems.

The licensee has made extensive efforts to computerize the corrective action program. Interviews with technicians from the maintenance shops revealed that many of them did not input directly into the program but relied on their supervisor to prepare Condition Reports. Two primary reasons for this were: 1) many technicians did not regularly use computers in their work and were unfamiliar with how to use the software; and 2) there was a limited number of computers available in the shops and user passwords expired every 30 days. Most of the technicians interviewed felt more comfortable with the paper feedback form that had been widely available under the previous system. None of technicians interviewed had any hesitation about raising an issue with their supervisor from a safety perspective.

The program requires condition reports to be reviewed for operability concerns by two licensed operators during screening meetings. The inspectors verified that the condition reports for the team's review had been reviewed for operability in a timely manner.

Through interviews the inspectors identified a weakness in lack of feedback on condition reports to originator. This was due to limited accessibility to computers and lack of knowledge on use of computer.

## 2. Prioritization and Evaluation of Issues

### a. Inspection Scope:

The inspectors' reviewed condition reports, self-assessments and audits, and observed condition review group and management review committee meetings to verify that identified issues were appropriately characterized, an appropriate analysis of the cause of the problem was performed for significant conditions adverse to quality, and the risk associated with combinations of issues was appropriately considered. In addition, the inspectors reviewed the licensee's evaluation of selected industry experience information to assess if issues applicable to Braidwood were appropriately addressed. Documents reviewed included operating event reports, NRC, and vendor generic notices. Information that the inspectors reviewed was selected in the time period from March 1999 to the present. A listing of the specific documents reviewed during the inspection is attached to the report.

### b. Issues and Findings:

There were no findings identified in this area. In general, issues were appropriately characterized and appropriate evaluations were conducted for significant conditions adverse to quality. The inspectors did not identify any issues regarding the risk associated with combinations of issues.

However, the inspectors identified a minor example of a narrowly focused evaluation resulting in an ineffective corrective action.

- In January, the licensee performed a calibration in the Unit 1 Delta T loop with values that were not updated to reflect the latest flux map. This was documented in PIF A2000-00444, "Master Test Report Packages for U-1 Delta-T Loops Not Updated to New Values Prior to 18-Month Calibration." Some corrective actions were taken within the Instrument Maintenance Planning department to address the apparent cause of the problem, determined to be a lack of timeliness by an Instrument Maintenance planner.

In August, another breakdown in the process occurred which resulted in the same calibration performed on the other unit without values from the latest flux map, though the circumstances were not the same. This was documented in CR A2000-03428, "Unit 2 Loop Delta T Calibrations." The original corrective actions were narrowly focused, and hence, ineffective in making the tie between periodic flux mapping dates and calibration dates. Since the August failure was similar, this latest CR was elevated to an evaluation class A and a root cause investigation initiated. This was an appropriate response.

The inspectors also identified the following minor problems:

- The inspectors identified several examples where corrective actions to apparent cause reports were either not entered into the licensee's action tracking system or entered into the system but never completed. These issues were minor in



nature and the licensee documented these deficient conditions on the following condition reports:

A2000-03614	ACE not completed for A2000-01528
A2000-03615	Corrective Actions for CAP ACE not Performed or Tracked
A2000-03598	Two Corrective Actions not Created from Completed Corrective Actions

- The inspectors also identified examples where corrective action items were closed to other mechanisms such as; engineering requests, work requests or training requests. The inspectors could not identify any instances where such items were closed to another mechanism and not completed. However, this is an example of the difficulty in tracking the items through the corrective action process to show closure to the other mechanisms and that the original CR issue was addressed.

### 3. Effectiveness of Corrective Actions

#### a. Inspection Scope:

The inspectors reviewed condition reports, operability determinations, root cause reports and action requests to verify that corrective actions commensurate with the issues were identified and implemented in a timely manner, including corrective actions to address common cause or generic concerns. Information that the inspectors reviewed was selected in the time period from March 1999 to the present. A listing of the specific documents reviewed during the inspection is attached to the report.

#### b. Issues and Findings:

There were no findings identified in this area.

The inspectors did note the following minor problems associated with the action tracking system:

- The action tracking system was cumbersome to use. Specifically, a tracking item would have multiple entries of a root cause report, or apparent cause report. This tended to disguise the individual corrective actions taken. Similarly, root cause reports or apparent cause report templates may be included in the action tracking item multiple times also disguising responses.
- Some of the documentation to support the events and root cause determinations were not included with the root cause report in the electronic action tracking system. The licensee noted that these charts were only included with the root cause report in hard copy form. This was due to a software restraint in the electronic tracking system.
- The inspectors also noted several instances where there was insufficient documentation or confusing information to track or determine completion of identified corrective actions. For example: the May 1999 ECCS piping voiding

event due to check valve problems, the May 1999 Unit 2 reactor trip due to spiking on the intermediate range (IR N36), and the March 2000 unplanned internal contamination events required personal explanations by licensee managers to understand the events or corrective actions.

The inspectors did not identify any resultant adverse consequences from the identified documentation deficiencies or the inappropriate corrective action to prevent recurrence.

The inspectors considered these deficiencies minor and administrative in nature.

4. Effectiveness of Licensee Audits and Assessments

a. Inspection Scope:

The inspectors reviewed selected licensee audits and self-assessments performed since March 1999. The review was conducted to determine whether the audit and self-assessment programs were effectively managed, adequately covered the subject areas, and to determine whether the associated findings were appropriately captured in condition reports. In addition, the inspectors interviewed licensee personnel regarding the audit and self-assessment programs. A listing of the specific documents reviewed during the inspection is attached to this report.

b. Issues and Findings:

There were no findings identified this area. Recently completed self-assessments adequately covered the subject area and the associated findings were appropriately captured in condition reports. The licensee conducted several self-assessments of the corrective action program between March 1999 and the start of this inspection which were documented in reports and CR's.

The assessments were considered thorough and intrusive in that a broad range of corrective action program topics were covered. Most of the documented findings and observations were similar to the examples identified by the inspectors.

The inspectors noted that in Spring 2000, corporate nuclear oversight reviewed a number of site root cause reports, trend investigative reports and apparent cause reports. Corporate nuclear oversight recognized that these reports were not in complete compliance with the corrective action program handbooks. Their findings were documented on condition reports. Initially, the station did not adequately address these quality issues. However, subsequent guidance from management issued in the Summer of 2000 directed that corrective actions be taken to improve corrective program cause reports. These actions included use of the root cause report quality checklist, specifying a senior manager as a sponsor for each root cause report and designating responsibilities/expectations for those sponsors, and strengthening the review of root cause reports by approving committees.

A number of recent findings in condition reports had evaluation due dates after September 27, 2000. Consequently, the inspectors could not review a number of resultant corrective actions.

5. Assessment of Safety Conscious Work Environment

a. Inspection Scope:

The inspectors interviewed over 20 staff members from all work groups and all organization levels regarding the licensee corrective action program, including the employees concerns program. The type of questions included in Appendix 1 to NRC Inspection Procedure 71152, "Suggested Questions For Use In Discussions With Licensee Individuals Concerning PI&R Issues," were utilized during the interviews to assess whether conditions existed that would challenge the establishment of a safety conscious work environment.

b. Issues and Findings:

There were no findings identified this area. The inspectors concluded, based on information collected from interviews with over 20 licensee personnel, that licensee personnel communicated an accepted responsibility to pro-actively identify and enter safety issues into the corrective action program.

The inspectors determined that the issues brought to the employees program administrator were appropriately dispositioned. Issues that were substantiated and needed corrective actions completed were adequately tracked in the licensee's corrective action program. The inspectors noted that the licensee planned to modify the employees concern program by eliminating the program administrators position and employing the site nuclear oversight manager as the programs new administrator.

Additionally, although all personnel interviewed were knowledgeable of the licensee's employees concern program, none of the interviewees had brought any issues to the programs administrator. The inspectors determined that the employees were not reluctant to bring a concern to the programs administrator, but that the existing method of informing a first line supervisor of problems, was working sufficiently well that the employees concern program was not needed to be utilized.

The inspectors also determined that several interviewees lacked general information about the employees concerns program (ECP) such as who the employee concerns program administrator was, who the administrator reported to, and how to enter a concern into the program. However, the interviewees were aware of how to find the ECP phone number and how to contact the NRC.

40A6 Management Meetings

Exit Meeting Summary

The inspectors presented the results to Mr. Keith Schwartz, Plant Manager, and other members of licensee management at the conclusion of the inspection on September 22, 2000. The licensee acknowledged the findings presented.

The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. Proprietary information was provided and examined during the inspection, and was returned to the licensee.

## PARTIAL LIST OF PERSONS CONTACTED

### Licensee

R. Krich, VP, Regulatory Services  
G. K. Schwartz, Braidwood Plant Manager  
C. Dunn, Operations Manager  
L. Guthrie, Maintenance Manager  
J. Harvey, Nuclear Oversight Manager  
V. Klco, Corporate Corrective Action Program Manager  
C. Herzog, Executive Assistant  
K. Ihnen, Nuclear Oversight Assessment Manager  
D. Overbeck, Systems Engineer  
J. Giuffre, Mechanical Maintenance Superintendent  
D. Trier, EMD  
T. Luke, Site Engineering Director  
T. Odette, MWP  
L. Kepley, Reactor Engineer  
J. Leach, Operations  
D. Minarich, IM  
P. O'Brien, Security  
D. Skoza, Design Engineering  
T. O'Brien, Systems Engineering  
A. Ferko, Systems Engineering  
M. Cassidy, Regulatory Assurance  
J. Bailey, Regulatory Assurance  
T. Simpkin, Regulatory Assurance  
M. Trusheim, Operations

### NRC

C. J. Phillips, Senior Resident Inspector  
N. Shah, Resident Inspector  
S. A. Reynolds, Deputy Director, Division of Reactor Safety, RIII

### IDNS

J. Roman, Resident Engineer

## LIST OF DOCUMENTS REVIEWED

### **Braidwood Nuclear Power Station Procedures:**

- AD-AA-106 Corrective Action Program (CAP) Process Procedure, Revision 3
- BwIP-2100-003 Control of Master Test Report Packages
- BwRP6020-2 Radiological Air Sampling Program, Revision 5
- CAP-3 Root Cause Investigation and Report Handbook, Revision 3
- CAP-4 Common Cause Analysis Handbook, Revision 1
- CAP-5 Effectiveness Review Handbook, Revision 1
- CAP-6 Coding and Trending Handbook, Revision 2
- CAP-7 PassPort Action Tracking Record Retention Handbook, Revision 2
- CAP-8 Apparent Cause Evaluation (ACE) Handbook, Revision 2
- CAP-9 CAPSYS Process Instructions Handbook, Revision 1
- CAP-10 Corrective Action Program (CAP) Guidance and Expectations Handbook, Revision 1
- OP-AA-101-301 Operations Configuration Control
- RS-AA-115 Operating Experience (OPEX), Revision 2

### **Condition Reports (CR):**

<u>Number</u>	<u>Title</u>
• A1998-04148	Unit 1 SI Check Valve Leakage
• A1999-00038	2CC01PA - Coupling Bolts
• A1999-00039	1FC01P - Coupling Bolts
• A1999-00041	Coupling Bolt Inspection on CC and FC Pumps
• A1999-00486	Gas discovered during venting of 1SI058A
• A1999-00755	125VDC 212 Weekly Surveillance not on Station Schedule
• A1999-00811	Late Identification of Freeze Seal for A2R07
• A1999-00855	Late Identification of Freeze Seal for A2R07
• A1999-00852	Battery 112 Quarterly Surveillance Discrepancies
• A1999-00981	DC Bus 112 Ground During Rain Storm (110 VDC)
• A1999-01026	Unit 2 Reactor Trip
• A1999-01053	WR 960091862 failed PMT - 1PS230A
• A1999-01101	Minimum CC Outlet Temp in CCHX Test Proc. BwVS 900-28 & 900-29
• A1999-01150	Acoustic Testing of Valve 2AF003B Did Not Indicate Full Open
• A1999-01154	Hydrostatic Test Gauge Over Pressurization
• A1999-01431	Poor Inspection Planning Causes Excessive Dose
• A1999-01598	Error in 125 VDC Battery Calculation Load Profile
• A1999-01620	Entrained Air/Gas Identified in Unit 1 ECCS Piping
• A1999-01631	Incorrect Tech Spec LCO Exit
• A1999-01647	Piping Overpressurized during Bench Test
• A1999-01650	Air Pockets Identified in ECCS Piping (Second Time)
• A1999-01658	Entrained Air/Gas Identified in Unit 1 ECCS Piping
• A1999-01692	Unit 2 Reactor Trip on IR High Flux
• A1999-01728	Auxiliary Feedwater Pump UFSAR Testing Discrepancy
• A1999-01846	Small amount of radioactivity present in U-2 CC system
• A1999-01873	Borated Water Spill in 2B AF Diesel Room

- A1999-01933 OPEX Review of NON BY-99-033 (EJ) Battery Cell Found Less than Tech Spec Required
- A1999-02008 Poor Quality of Root Cause Reports
- A1999-02022 OPEX Review of NON BY-99-034 (BP) Motor Control Center Breaker Inadvertently Bumped
- A1999-02071 Air in water during U-1 ECCS vent
- A1999-02291 Gas/air vented during surveillance
- A1999-02344 Potential Trend - Maintenance Work Package Execution
- A1999-02416 Under Test Conditions, Mechanical Seal Leaks 1 gpm
- A1999-02598 Capture Lessons/OPEX Review of NON BY-99-044-Configuration Control During Freeze Seal
- A1999-02628 2TS-VD054 Feed to Annunciator Unavailable
- A1999-02715 CC lines to U-1 RH pps seal coolers should not be insulated
- A1999-02716 Diesel Driven Auxiliary Feedwater Pump Failed to Start During Routine Surveillance Testing
- A1999-02835 Potential Violation of Shift Turnover/Relief Procedure
- A1999-02962 Engrained Air/Gas identified in Unit 1 ECCS Piping
- A1999-03165 0BwOS DC-W4 for 125V TSC/Security Battery Failed Surveillance
- A1999-03236 Failure to Create Follow-up Action Tracking Items from Corrective Actions
- A1999-02929 SSPS Slave Relay's Response Time Untested
- A1999-02964 U-2 CC Makeup Valve (2CC183) binding
- A1999-03089 OCC9432, Thermal Relief, Piped and Installed Improperly to Perform its Design Function
- A1999-03201 2A DG Starting Air Piping Support Not Installed
- A1999-03209 Unposted Contamination Area
- A1999-03355 Capture Lessons/OPEX Review of NON BY-99-078 (XX) Deficiencies with Protected Equipment Status
- A1999-03431 Identified Deficiencies in Microfilmed RCS Leak Rate Surveillance
- A1999-03453 N.O. Identified a High Radiation Event Not Included in the NEI/NRC Performance Indicator
- A1999-03458 Inadequate Practices Following a Blown Fuse
- A1999-03471 N.O. Identified - Search Program used for NEI/NRC Performance Indicator Reporting Inadequate
- A1999-03473 N.O. Identified - NEI/NRC Performance Indicator MS-3 Data Submitted was Incorrect
- A1999-03474 N.O. Identified a NEI PI Alert & Notification System Reliability Data & Reporting Inaccuracy
- A1999-03475 N.O. Identified NEI PI Siren Reliability and Operability Inconsistencies
- A1999-03476 N.O. Identified - NEI/NRC Performance Indicator MS-4 Performance Indicator Incorrect
- A1999-03477 N.O. Identified NEI PI ERO Participation Value Inaccurate
- A1999-03479 N.O. Identified NEI Performance Indicator Discrepancies
- A1999-03486 N.O. Identified - NEI/NRC Performance Indicator MS-3 (AF) Unavailability Value Over Reported
- A1999-03498 N.O. Identified ineffective corrective actions for two previous findings
- A1999-03508 N.O. Identified that Guidance for Reporting Multiple RCS Samples for NEI Indicators is Unclear
- A1999-03588 Capture Lessons/ OPEX Review of NON By-99-087 (XX) B2R08 Breker Failures

- A1999-03710 Trend PIF - OOS Issue Within Maintenance Department
- A1999-03725 2B RCP Thermal Barrier CC Flow low alarm
- A1999-03790 -93V Ground on DC Bus 112
- A1999-03869 1TE-CV002E Not Installed at Time of 1CV01PB Pump Run
- A1999-03940 Voltage Drop for Common CC Pump Switchgear Breaker Closing Coil not Evaluated
- A1999-03957 Potential Adverse Trend-Water Found in Filter Vaults
- A1999-03989 Battery 211 Potentially Inoperative
- A2000-00051 Incorrect Discriminator Values in 1NR-NR8031 Package
- A2000-00055 Poor Quality ACE Does Not Identify All of the Corrective Actions Required
- A2000-00145 RCP 2B Thermal Barrier CC Wtr Flow Low
- A2000-00158 Additional information for PIF A2000-00145
- A2000-00164 Numerous Procedure Violations - OP-AA-101-308, Equip-in-use Program
- A2000-00268 Potential Trend - Increased Frequency of Human Performance Errors in Fuel Handling
- A2000-00272 Maintenance Rule Unavailability for CV-2 Criteria is Approaching Limit
- A2000-00444 Master Test Report Packages for U-1 Delta-T Loops Not Updated to New Values Prior to 18 Month Calibration
- A2000-00576 Potential Rework Valve 2AF017A Leaks By
- A2000-00583 Potential Trend - Equipment-in-use Tag Violations, NSP OP-AA-101-308
- A2000-00661 Lack of Rigor in handling increasing radiation indications on VC and other radiation monitors
- A2000-00669 Battery Charger 112 Trouble Annunciator
- A2000-00734 Radioactive Shipments can leave the site without RP approval
- A2000-00804 AT Assignments Found in the In-Progress Status and Not Issued for Department Resolution
- A2000-00855 Potential Trend - Missed Fire Watches
- A2000-00883 Trend-Incorrect/Uncontrolled Procedures in RP
- A2000-00997 Adverse Trend Identified for the NEI Safety System Unavailability Indicator for the AF System
- A2000-01002 2B RCP Thermal Barrier CC Wtr Flow Low Alarm
- A2000-01105 Inconclusive Acoustic Test Results on AF Check Valves
- A2000-01217 Line No. 1SI48AF-3/4" (Failed Weld)
- A2000-01327 Individual Badged Whose Unescorted Access Was Currently Suspended At Another Comed Site
- A2000-01373 Failure Of As-Found Inspection Of 1CC9495C
- A2000-01390 Component Cooling water leakage into CWA
- A2000-01407 1CC9426A Relief Valve Failed As-Found Setpoint Acceptance Criteria
- A2000-01528 N. O. Identified Ineffective Corrective Actions
- A2000-01539 Inadequate Corrective Action for Previous Configuration Control Event"
- A2000-01621 Unplanned Internal Contamination During Cavity Decon
- A2000-01641 Unplanned Entry Into SX LOCAR
- A2000-01684 2B AF Pump Response Time Data Anomaly
- A2000-01695 U-2 Turbine Crane Damaged Drive Wheel
- A2000-01730 DC Ground on Bus 112
- A2000-01778 Ineffective Corrective Actions in Numerous PIFS
- A2000-01912 112 Battery 100 VDC Negative Ground During Rain
- A2000-01928 Missed Surveillance 1BwOSR 3.8.1.1
- A2000-01969 Potential Adverse Trend - Improper Gasket Installation Practices



- A2000-02065 Maintenance Focus Area Self-Assessment Identified Poor Quality BOM Documentation
- A2000-02069 Potential trend - FME Related Issues and Events
- A2000-02097 Second Deferral for 1CC9429
- A2000-02126 Degraded Voltage on Instrument Bus 214
- A2000-02140 2A AF Valve Strokes - No flow from Telltale Drain
- A2000-02171 Misclassification of On-Line Risk Color with 120VAC Bus 214 without Power
- A2000-02206 Inadequate Trend Investigation Report AT #19885
- A2000-02207 Inadequate Root Cause Report AT #20504
- A2000-02208 Inadequate Trend Investigation Report AT #21046
- A2000-02209 Inadequate Trend Investigation Report AT #24346
- A2000-02210 Inadequate Trend Investigation Report AT #24390
- A2000-02595 Arcing Wire in Security MUX 2
- A2000-02598 RCP 1D TERM BARR CC WTR FLOW LOW
- A2000-02626 Bad Wire Replacement in Security Multiplexer 2
- A2000-02682 DC 112 Bus Ground
- A2000-02771 Corrective Actions from ACE Not Identified In Action Tracking
- A2000-02842 Ground on DC Bus 112
- A2000-02850 QC Identified Procedure Adherence Problems
- A2000-02913 N.O. Identifies Deficiencies Noted in Work Control Planning
- A2000-02915 N.O. Identified that Poor Work Package Quality Challenged Worker and Supervisor Productivity
- A2000-02916 Insufficient E-3 Walkdowns Result in Delays During Work Execution
- A2000-02917 N.O. Identified Several Areas for Improvement During Assessment
- A2000-02919 2B AF Pump Speed Increaser Aux Oil Pump Cycling
- A2000-02951 Power Interruption to Security Multiplexer #2 Caused Unexpected Security Computer System Disruption
- A2000-03002 Potential Rework - 1D CD Pump Gear Reducer Oil Leak
- A2000-03120 Argon-41 isotope found in U2 Component Cooling Sample
- A2000-03129 Stroke Timing of Valve 1/2SX101A
- A2000-03139 Unintentional gravity fill of spent fuel pool via U-2 RWST
- A2000-03218 Chemical treatment not performed on U-1 due to insufficient level in OCF18T
- A2000-03230 Review of RCR Determined to be Unsatisfactory by Downers Grove CAP
- A2000-03231 Root Cause Report Deficiencies Found During Station Self-Assessment
- A2000-03235 Unresolved Questions for Scope of 2SI8804B
- A2000-03248 2SI8804B Valve Stroke Survs May Make RH Trains Inoperable
- A2000-03282 Effectiveness review not scheduled as required
- A2000-03285 125V DC Bus 111 Ground
- A2000-03399 Self-Assessment Identified 12.5 percent of Inappropriately Closed Corrective Actions in Various Departments
- A2000-03403 Potential Misclassifications of CNAQ and Level 3 Conditions
- A2000-03428 Unit 2 Loop Delta T Calibrations
- A2000-03445 Wrong Ground Detectors Installed
- A2000-03452 Second Deferral; 1LSL-CC073 PMID# 140528
- A2000-03458 AT Item Closed Without Required Actions Completed
- A2000-03461 Lost Field Observation Forms
- A2000-03463 CVCS Modeling Assumption for Loss of Offsite Poser Analysis
- A2000-03540 Extended 2B RH ASME Run caused by Boron Sampling Confusion

- A2000-03543 Outage Seatrain Blocking Emergency Vehicle Access
- A2000-03579 ESF DC Bus 112 Ground
- A2000-03598 Two Corrective Actions not Created from Completed Corrective Actions
- A2000-03614 ACE Not Completed for A2000-01528
- A2000-03615 Corrective Actions from CAP ACE not Performed or Tracked
- A2000-03633 CR not generated when condition identified

### **Licensee Self-Assessment Reports:**

#### Title

- Braidwood Station Assessment Report, Nuclear Oversight Assessment NOA-20-99-029 Corrective Actions; June 7-30, 1999
- Annual Effectiveness Review (Self-Assessment) of the Braidwood Station Operating Experience (OPEX) Program as required in RS-AA-115, paragraph 4.6, conducted during the week of January 17, 2000
- Focused Area Self-Assessment - Problem Identification & Resolution (PI&R) 8/07/00 to 8/18/00
- Maintenance Adherence to the Bill of Material Work Package Closeout Requirements of Procedure
- Independent Evaluation of the Effectiveness of the Root Cause Process
- Action Tracking Item (ATI) A2000-03012 Effectiveness Reviews not always scheduled/completed as required by procedure
- ATI A2000-03230 Review of RCR (AT #27320) determined to be Unsatisfactory by Downers Grove CAP
- ATI A2000-03231 Root Cause Report Deficiencies found during Station Self-Assessment
- ATI A2000-03256 New Effectiveness Review Not Scheduled, and CA's Not Documented
- ATI A2000-03281 AT item closed without Corrective Actions Completed
- ATI A2000-03282 Effectiveness review not scheduled as required
- ATI A2000-03353 CAPR Action Items not entered in to Action
- ATI A2000-03356 CR's incorrectly bypassed from Shift Review found during CAP Self-Assessment
- ATI A2000-03357 Feedback reports are not being provided to CR originators for ACEs completed
- ATI A2000-03399 Self-Assessment identified 12.5 percent of Inappropriately Closed Corrective Actions in various Departments
- ATI A2000-03403 Potential Misclassification of CNAQ and Level 3 Conditions
- Action Tracking Item (ATI) A2000-03462 Review of Oldest Corrective Actions - Possible Enhancements

### **Nuclear Oversight Assessments:**

<u>Number</u>	<u>Title</u>
• NOA 20-99-OP39	Implementation of SOER 98-01 Recommendations
• NOA 20-99-OP41	Operations - Configuration Control
• NOA-20-99-ES45	NEI/NRC Performance Indicators
• NOA-20-00-MS09	Work Management and Maintenance Work Practices

### **Generic Communications:**

Includes: Industry Experience Reports, Westinghouse Tech-Notes and NRC Information Notices (IN)

<u>Number</u>	<u>Title</u>
•	INPO Significant Event Notification (SEN) 204, "Water Chemistry Induced Fuel Leaks," 09/20/99 and the licensee response
•	INPO Significant Event Notification (SEN) 210, "Reactor Scram Caused by Rapid Injection of Cold Feedwater," 12/13/99 and the licensee response
•	Westinghouse Nuclear Safety Advisory Letter, NSAL-99-005, "Reactor Coolant Pump Operation During Loss of Seal Injection," June 1, 1999 and the licensee response

### **Work Orders:**

<u>Number</u>	<u>Activity</u>
• 980076959-01	Install Snubber Circuit per Modification D20-1-98-209
• 990068268-01	Contingency Package for Repairs at Battery Charger 112

### **Action Requests**

- 99100488 Repair Gear Box Oil System 20 PSIG Regulating Valve
- 00003161 A1997-05128, Process Radiation Monitors Criteria Recommended
- 00003359 A1998-03465, 1SA033 Failed LLRT Test - Evaluate Failure
- 00003388 Failure Criteria Exceeded for MR Function AP1
- 00003389 A1998-03947, Failure Criteria Exceeded for MR Function AP4
- 00003864 SSPS Slave Relay's Response Time Untested
- 00005849 Late Identification of Freeze Seal for A2R07
- 00006416 Unit 2 Reactor Trip
- 00007651 Hydrostatic Test Gauge Over Pressurization
- 00008183 Poor Inspection Planning Causes Excessive Dose
- 00011185 Entrained Air/Gas Identified in Unit 1 ECCS Piping
- 00011332 Piping Overpressurized during Bench Test
- 00011381 Unit 2 Reactor Trip on high IR flux
- 00015708 2TS-VD054 Feed to Annunciator Unavailable
- 00016833 SSPS Slave Relay's Response Time Untested
- 00017659 OCC9432, Thermal Relief, Piped and Installed Improperly to Perform its Design Function
- 00019082 Inadequate Practices Following a Blown Fuse

- 00019203 A1999-03498, N.O. identified ineffective corrective actions for two previous findings
- 00020728 Voltage Drop for Common CC Pump Switchgear Breaker Closing Coil not Evaluated
- 00021033 Battery 211 Potentially Inoperative
- 00022015 Numerous Procedure Violations - OP-AA-101-308, Equip-in-use Program
- 00022222 A2000-00272, Maintenance Rule Unavailability for CV-2 Criteria is Approaching Limit
- 00022838 Master Test Report Packages for U-1 Delta-T Loops Not Updated to New Values Prior to 18-Month Calibration
- 00023086 Incorrect Discriminator Values in 1NR-NR8031 Package
- 00023391 Potential Trend - Equipment-in-use Tag Violations, NSP OP-AA-101-308
- 00027433 A2000-01935, Maintenance Rule Criterion PC4 Did Not Return
- 00028260 Degraded Voltage on Instrument Bus 214
- 00033108 Unintentional Gravity Fill of Spent Fuel Pool via U-2 RWST
- 00033651 Unresolved Questions for Scope of 2SI8804B Work
- 00034293 Unit 2 Loop Delta T Calibrations
- 00034303 Wrong Ground Detectors Installed

### **Operability Determinations**

- 99-002 Component Cooling Pumps Coupling
- 99-013 ECCS piping gas voids
- 99-014 Auxiliary Feedwater Pump UFSAR Testing Discrepancy
- 99-016 Borated Water Spill in 2B AF Diesel Room
- 99-021 Under Test Conditions, Mechanical Seal Leaks 1 gpm
- 99-023 Unit 1 Diesel Driven Auxiliary Feedwater Pump Failed to Start During Routine Surveillance
- 99-025 0CC9432 CC Relief Valve Piped Backwards, Rev 1
- 99-027 Common Component Cooling Pump Switchgear Breaker
- 00-001 1B 125VDC Battery Charger 112

### **Miscellaneous Documents:**

- Memo, "Radiation Protection "Stop Job Authority," 09/11/00
- Memo, "Improving Quality of Root Cause Reports," 05/12/00
- Memo, "Root Cause Analysis Trained Personnel," 05/16/00
- Memo, "Short Term Action Items to Address Identified Root Cause Deficiencies," 06/16/00
- Memo, "Root Cause Analysis Improvement Actions," 07/10/00
- M-37, Rev BD, "Diagram of Auxiliary Feedwater," 01/04/00
- LER 50-457/1999-001-00 "Unit 2 Generator and Subsequent Reactor Trip due to a Spurious Generator Stator Ground Relay (GIX-104) Actuation and Subsequent Rod Control Problems
- LER 50-456?????/1999-002-00 "SSPS Slave Relay's Response Time Untested Due to Inadequate Procedures
- LER 50-456/2000-001-00 "Manual Actuation of the Main Control room Ventilation System (VC) due to Conservative Decision Making Based on Environmental Conditions," and associated licensee tracking information

- LER 50-457/2000-001-00 “2A Essential Service Water Pump Inoperable for more than the Technical Specification Allowed Outage Time,” and associated licensee tracking information
- Lesson Plan, “Airborne Radioactivity Control,” Revision 0, 04/11/00
- Lesson Plan, “Eberline AMS-4 Air Monitor,” Revision 0, 07/07/00
- Lesson Plan, “Hazard Recognition,” Revision 0, July 2000
- Lesson Plan, “TEDE ALARA Evaluation,” May 12, 2000
- NRC Inspection Report 50-456/457-99005(DRS) Engineering and Corrective Actions, April 23, 1999
- NRC Plant Performance - Braidwood Nuclear Power Station, March 31, 2000
- Review of Corrective Action Program Indicators with the NRC, dated 8/29/00
- Root Cause Investigation Report, “Unplanned Intakes and Personnel Contaminations During Cavity Decontamination Due to Complacency to Changing Radiological Conditions,” 7/24/00 and the licensees response
- Condition Review Group Meeting Minutes, September 14, 2000
- Management Review Committee Meeting Minutes, September 14, 2000
- Maintenance Rule (a)(1) Action Items
- Abnormal Component Position Notebook
- Abnormal Component Position Archive
- Caution Card Log
- ComED - NRC letter, Request for Notice of Enforcement Discretion Concerning Extension of the Shutdown Requirement of Technical Specification Limiting Condition for Operation 3.0.3
- NRC - Oliver D. Kingsley letter, Notice of Enforcement Discretion for Commonwealth Edison Company Regarding Braidwood Unit 1, NOED 99-3-02
- Stone and Webster Engineering Report, Fluid Transient Study of the Emergency Core Cooling System (ECCS) Piping due to Pump Start-up with Air Bubble, dtd
- ComEd Safety Evaluation, Evaluation of the Impact on the Peak Clad Temperature (PCT) of 10 Cubic Feet/Loop of Non-condensable Gas Introduced into the RCS via the RHR Pump during a Design Basis Accident for Braidwood Unit 1, Cycle 8
- Licensed Operator Requalification Training Module, P1-SP-00-02, Component Abnormal Position Programs

## List of Abbreviations

ACE	Apparent Cause Report
AFW	Auxiliary Feedwater
AT	Action Tracking Item
BOM	Bill of Materials
CAP	Corrective Action Program
CR	Condition Reports
dc	direct current
DG	Diesel Generator
ECCS	Emergency Core Cooling System
ERO	Emergency Response Organization
FME	Foreign Material Exclusion
IR	Intermediate Range
ITS	Item Tracking System
NEI	Nuclear Energy Institute
NO	Nuclear Oversight
NOA	Nuclear Oversight Assessment
MUX	Multiplexer
OOS	Out of Service
PIF	Problem Identification Form
RCR	Root Cause Report
RCS	Reactor Coolant System
RP	Radiological Protection
SI	Safety Injection
SOER	Significant Operating Event Report
TIR	Trend Investigative Report
UFSAR	Updated Final Safety Analysis Report