

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 50-456/97019(DRP); 50-457/97019(DRP)

Licensee: Commonwealth Edison (ComEd)

Facility: Braidwood Nuclear Plant, Units 1 and 2

Location: RR #1, Box 84
Braceville, IL 60407

Dates: November 4 - December 15, 1997

Inspectors: C. Phillips, Senior Resident Inspector
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Approved by: Michael J. Jordan, Chief
Reactor Projects Branch 3

EXECUTIVE SUMMARY

Braidwood Nuclear Plant, Units 1 and 2
NRC Inspection Report No. 50-456/97019(DRP); 50-457/97019(DRP)

This inspection included aspects of licensee operations, maintenance, engineering, and plant support. The report covers a 6-week period of resident inspection from November 4 through December 15, 1997.

Operations

- The inspectors concluded that the operating crews performing the startup from the Unit 2 refueling outage demonstrated excellent human performance when challenged by a waterhammer event on the 2D tempering feedwater line on November 10 and a boron dilution prevention system actuation on November 14. The operators were observed to quickly identify the problem, enter the appropriate procedures and terminate the transients. The inspectors observed that throughout the startup, pre-evolution briefings met or exceeded management expectations, operators followed procedures, and there was continuous supervisory involvement and oversight. (Section O.1)

Maintenance

- On November 14, inspectors observed maintenance activities for the repair of hydraulic actuator leakage on main steam isolation valve 1MS001C. The inspectors concluded that the work package was properly prepared and the work was properly performed in accordance with the work package. However, the inspectors observed that the mechanics had to realign the hydraulic tubing and this was not documented in the work package. The inspectors concluded that not documenting as-found conditions was a poor work practice. (Section M1.1)
- The inspectors concluded that licensee personnel failed to identify and remove all loose materials from the containment as required by a containment loose debris surveillance conducted on November 2. A Notice of Violation was issued. (Section M4.1)
- On November 24, the inspectors observed the performance of 2BwVS 1.2.3.1-1, an American Society of Mechanical Engineers Code performance test, on the 2A centrifugal charging pump, and concluded that the surveillance test was properly performed and acceptance criteria were met. (Section M4.2)

Engineering

- The inspectors performed a review of three safety-related modifications installed during the most recent Unit 2 refueling outage (A2R06) and concluded that the modifications and revisions were processed in accordance with the appropriate procedures, were properly documented, and received proper safety evaluations. The inspectors concluded that post-modification test procedures were well written and adequately verified that the modification performed as designed. The physical installation of modification hardware appeared to match the work package specifications. (Section E2.1)

Plant Support

- The inspectors concluded that three vehicle searches observed on November 21 at the entrance to the protected area were performed in accordance with the appropriate licensee procedure and that the proper revision of the procedure was used. No problems were observed. (Section S1.1)

Report Details

Summary of Plant Status

Unit 1 entered the inspection period at 100 percent power and stayed at or near full power for the entire period. On November 24, Unit 1 had run for 182 consecutive days exceeding a previous Unit 1 record run of 181 days.

Unit 2 entered the inspection period shutdown for refueling outage A2R06. The unit was made critical on November 14, was synchronized to the grid on November 15, reached full power on November 26, and operated at or near full power until the end of the period.

I. Operations

O1 Conduct of Operations

O1.1 Unit 2 Startup From Refueling Outage A2R06

a. Inspection Scope (71707)

The inspectors observed portions of the licensee's preparation for startup of Unit 2 after refueling outage A2R06 on November 9 and 10 and again on November 14. The inspectors observed the licensee's pre-evolution briefings and reviewed BwAP 100-12, "Human Performance Awareness of Pre-Job Briefings/Meetings and Self Checking," Revision 5. The inspectors also reviewed BwGP 100-1, "Plant Heatup," Revision 10; BwGP 100-2, "Plant Startup," Revision 9; BwVS 500-3, "Reload Startup Physics Tests Following Refueling," Revision 13; BwVS 500-4, "Initial Criticality After Refueling and Nuclear Heating Level," Revision 12; and 2BwOA SEC-6, "Feedwater Tempering Line Loss of Subcooling," Revision 4.

b. Observations and Findings

On November 10, the inspectors verified that the pre-evolution briefings met the requirements of BwAP 100-12. All the necessary personnel attended the meeting. The inspectors observed that at least one nuclear station operator (NSO) had received training on the startup and physics testing prior to the startup. The NSO specifically asked for management expectations on what contingency actions were to be taken if unexpected rod position indications were received at different points in the rod withdrawal sequence.

The inspectors performed a partial verification of the lineup requirements of BwGP 100-1 and verified the prerequisites for BwGP 100-2 had been met. While performing steps of BwGP 100-2, just prior to control rod withdrawal, the licensee opened the preheater bypass valve 2FW039D. A loud waterhammer was heard in the control room. Shortly after that, indications were received in the control room that the 2D tempering feedwater line had lost flow. The inspectors verified that the operations crew identified that there was a loss of subcooling in the tempering feedwater line to the "D" steam generator. The

operations crew entered and followed 2BwOA SEC-6 for loss of feedwater tempering line subcooling. At that point the startup was terminated until further troubleshooting could be completed.

Further inspection on November 11, revealed significant damage to the 2D tempering feedwater line piping supports inside the Unit 2 containment. Additional details regarding the cause of the waterhammer, the adequacy of procedures, and the extent of the damage will be discussed in Inspection Report No. 97021.

Repairs were made to the feedwater line supports and reactor startup recommenced on November 14. Within minutes of reactor criticality, a boron dilution prevention system (BDPS) actuation occurred and borated water was injected into the reactor. The actuation occurred due to the slow power ascent at a 0.1 decade per minute startup rate. One intermediate range instrument associated with the "B" train BDPS momentarily went above 10×10^{-10} amps which unblocked the BDPS actuation signal and then dropped below 5×10^{-11} amps which reanned the BDPS actuation system. Concurrently, source range counts had doubled within the last 10 minutes which actuated BDPS. The actuation did not occur due to operator error. The operators were observed taking the appropriate actions to secure the borated water injection. An estimated 120 gallons of borated water was injected. After the boration was secured, a positive 0.1 decade per minute startup rate was observed. Thus, the negative reactivity inserted from the borated water injection had little effect on the power level. The startup then continued without incident up to 1×10^{-8} amps.

c. Conclusion

The inspectors concluded that the operating crews performing the startup from the Unit 2 refueling outage demonstrated excellent human performance when challenged by equipment failures. On November 10, the inspectors observed operator action after a waterhammer event on the 2D tempering feedwater line. The operators entered the appropriate procedure and quickly terminated the event. On November 14, a BDPS actuation occurred moments after the reactor was made critical. The operators were observed terminating the BDPS actuation quickly and appropriately. The inspectors observed that throughout the startup, pre-evolution briefings met or exceeded management expectations, operators followed procedures, and there was continuous supervisory involvement and oversight.

O2 **Operational Status of Facilities and Equipment**

O2.1 Out-of-Service (OOS) Review

a. Inspection Scope (71707)

The inspectors reviewed an OOS in effect and an OOS recently cleared. The inspectors also interviewed operations personnel in the work control center.

b. Observations and Findings

The inspectors reviewed OOS 950001122, which was placed on essential service water components for administrative control to assure compliance with TS 4.7.4. The OOS was

properly prepared and authorized. All components listed on the OOS were in the required position with appropriate OOS cards affixed. Documentation for the OOS was complete.

The inspectors also reviewed recently cleared OOS 970012343. The OOS was placed on 1B emergency diesel generator starting air compressor #2 in order to perform lubrication of the compressor motor. All components were returned to the required position listed for the return-to-service of the starting air compressor. All OOS tags were removed from components. Documentation for the cleared OOS was complete.

c. Conclusions

The inspectors concluded that the two out-of-services reviewed safety-related components were properly placed, removed, and documented.

O8 Miscellaneous Operations Issues (92700 and 92901)

O8.1 Institute For Nuclear Power Operations (INPO) Report Review

The inspectors reviewed the INPO evaluation report of Braidwood Station 1997 performance dated October 6, 1997, on November 28. The inspectors concluded that there were neither findings that affected the health and safety of the public nor that required additional followup by the resident inspectors.

O8.2 (Closed) Licensee Event Report (LER) 50-457/96004-00: On May 23, and again on May 24, 1996, TS 3.0.3 was not entered as required by TS 3.4.6.1 when leak detection systems were inoperable. The plant was placed in this condition during routine filter changes on the containment atmosphere monitor with the containment floor drain leak detection system flow transmitter inoperable. The containment atmosphere monitor was returned to service prior to the expiration of the limiting condition for operation. The licensee determined that both events were caused by human error. The inspectors reviewed the licensee's completed corrective actions and considered them appropriate. This item is closed.

II. Maintenance

M1 Conduct of Maintenance

M1.1 Maintenance Activities Performed on Main Steam Isolation Valve (MSIV) 1MS001C

a. Inspection Scope (62707)

On November 12, the inspectors observed maintenance activities on MSIV 1MS001C. The inspectors reviewed work request 970119298-01, "2 Drop per Second Fyrquel Leak on Hydraulic Pump Discharge" (no revision); reviewed and monitored the establishment of required system status; monitored the performance of maintenance work; reviewed the completed work package, and interviewed licensee personnel at the job site.

b. Observations and Findings

Work request 970119298-01 was written to provide instructions for the removal, inspection and replacement of a portion of tubing to repair leakage on the hydraulic operator of 1MS001C. The inspectors reviewed the work package prior to the start of the work, no problems were observed.

The inspectors monitored the performance of work including the establishment of required system status and the removal, inspection, and reinstallation of the tubing. During reinstallation of the tubing, the mechanics identified that the tubing was misaligned which was the probable cause of the reported leak. The tubing was properly aligned and subsequently did not leak. No problems were noted with the performance of the work.

The inspectors reviewed the completed work package. Although the work package includes a section for the documenting of as found conditions, work performed, and root cause, the tubing misalignment problem was not documented. This was discussed with the field supervisor. No other problems were noted with the completed work package.

c. Conclusions

On November 14, inspectors observed maintenance activities for the repair of hydraulic actuator leakage on MSIV 1MS001C. The inspectors concluded that the work package was properly prepared and the work was properly performed in accordance with the work package. However, the inspectors observed that the mechanics had to realign the hydraulic tubing and this was not documented in the work package. The inspectors concluded that not documenting as-found conditions was a poor work practice.

M1.2 Cold Weather Preparations

a. Inspection Scope (71714)

The inspectors reviewed the licensee's preparations for protection from cold weather. The inspectors reviewed procedure 0BwOS XFT-A1, "Freezing Temperature Equipment Protection Annual Surveillance," Revision 5. The inspectors also interviewed operations and system engineering personnel.

b. Observations and Findings

The inspectors reviewed the completed surveillance procedure 0BwOS XFT-A1. The procedure was properly completed and all discrepancies were addressed with action requests. The inspectors verified that procedure 0BwOS XFT-A1 checked safety-related systems and components that are susceptible to cold weather effects.

Only one item identified in the completed procedure was a long-standing deficiency. The deficient item was a turbine building louver which was required to be closed for secondary system (non safety-related) protection. An action request was written on June 19, 1996, to repair damper OHS-VT404 LV-7.

The inspectors checked for licensee response to deficient items identified during performance of the cold weather checks. Actions to repair deficient items were scheduled for repair soon after discovery. For example, the security diesel generator jacket water cooling system did not meet acceptance criteria for anti-freeze protection. The licensee scheduled and implemented repairs within five weeks of discovery, and before extreme cold weather conditions were experienced.

c. Conclusions

The inspectors concluded that the licensee properly completed cold weather preparations. The licensee implemented appropriate and timely corrective actions to address the deficiencies identified while performing the annual cold weather surveillance procedure. Safety-related components appeared to be protected from the effects of cold weather.

M4 Maintenance Staff Knowledge and Performance

M4.1 Unit 2 Containment Closeout Inspection

a. Inspection Scops (61726)

The inspectors performed an independent inspection of the Unit 2 containment following the licensee's containment loose debris inspection prior to entry into Mode 4 (hot shutdown) from refueling outage A2R06. The inspectors reviewed BwVS 5.2.d.2.1, "Visual Surveillance of Containment Recirculation Sumps," Revision 4; 2BwOS 5.2.c-1, "Containment Loose Debris Inspection," Revision 6; Braidwood Problem Identification Form (PIF) # 456-201-96-0979; Operability Screening Form for PIF #456-201-96-0979; Braidwood Updated Final Safety Analysis Report (UFSAR), Appendix A, "Application of NRC Regulatory Guides," Regulatory Guide 1.82; and NRC Regulatory Guide 1.82, "Water Sources For Long-Term Recirculation Cooling Following A Loss-Of-Coolant Accident," Revision 2.

b. Observations and Findings

On November 2, the inspectors performed a containment loose debris inspection of the Unit 2 containment following notification from licensee management that operations department personnel had completed the containment loose debris surveillance inspection 2BwOS 5.2.c-6. The inspectors walked down all accessible elevations inside and outside of the missile barrier. Inspectors found that all trash, rags, protective clothing, and foreign material exclusion barrier materials had been removed. The containment sump covers and screens were found free of debris. However, the inspectors did observe several material condition problems, and loose materials. For example, the inspectors identified the following material condition problems:

- the 2B charcoal unit door was found unlatched;
- charging valve, 2AOV-CV8147, had a minor packing leak;
- seal table area radiation monitor meter, 2RIA-AR003, was erroneously reading 10,000 millirem per hour;

- surface gaps larger than the 3/8 inch mesh in the outer containment recirculation sump screens and a hole larger than the 3/16 inch mesh in the intermediate containment recirculation sump screen covers; and
- the 2B reactor cooling pump number 2 seal leakoff flow indicator reading less than zero.

The inspectors also identified the following examples of loose materials:

- tools were staged near the reactor head area (426 foot elevation) with no work requiring the tools being performed; and
- sheet metal covers on two of the incore drive units were not fastened down.

The inspectors discussed their findings with licensee management. The inspectors were told that the surface gaps in the outer containment recirculation sump screen had been previously identified in May of 1996, and documented by PIF #456-201-96-0979. The licensee told the inspectors that modification E20-0-97-298 would eliminate the surface gaps and would be completed prior to the change from mode five to mode four. The inspectors later verified that the modification was installed. The inspectors asked if modification E20-0-97-298 would also eliminate the holes in the covers of the intermediate screen. The licensee told inspectors that it would not, but provided the inspectors a copy of the operability screening justifying continued operation with the holes in the intermediate screen covers. The inspectors reviewed the operability screening for PIF #456-201-96-0979 and found that the licensee had based the operability of the containment recirculation sump on the existence of a vertical inner screen also constructed of 3/16 inch mesh located on the collection side of the containment recirculation sump weir plate. The inspectors found that the containment recirculation sump met the minimum design guidance found in NRC Regulatory Guide 1.82, Section C.1.3, with the holes in the intermediate screen covers.

The inspectors were concerned with the amount of loose equipment identified during the inspection. The inspectors obtained a copy of 2BwOS 5.2.c-1 that was performed on November 2, at 4:40 p.m. Step F.2.c required that loose tools and equipment that were not needed for approved work in progress be removed from containment. The inspectors found that loose materials and tools were not removed; that none of the discrepancies were documented on the surveillance data sheet; that there was no work in progress associated with the incore neutron detector drives or the tools staged near the reactor head area; and supervisory personnel were not aware that the incore drive mechanism covers were unfastened. Licensee personnel that performed the surveillance test procedure indicated on the surveillance test data sheet that the requirements of Step F.2.c were met with the exception of a clock that needed to be removed.

Technical Specification 6.8.1.a states, in part, that written procedures shall be established, implemented, and maintained covering the applicable procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978. Regulatory Guide 1.33, Appendix A, Section 3.f, states that there shall be instructions for the startup, operation, and shutdown of safety-related systems. The failure to follow 2BwOS 5.2.c-1 was a violation of TS 6.8.1.a. (50-457/97019-01(DRP)).

c. Conclusions

On November 2, the inspectors performed an inspection of the Unit 2 containment following notification by the licensee that they had completed their closeout inspection surveillance. Inspectors concluded that licensee personnel failed to identify and remove all loose materials from the containment. The inspectors identified unfastened covers on two incore neutron detector drive mechanisms and unattended tools near the reactor head. These were conditions that did not meet the acceptance criteria of 2BwOS 5.2.c-1, Step F.2.c.

M4.2 Surveillance Testing of the 2A Centrifugal Charging Pump

a. Inspection Scope (61726)

The inspectors observed the performance of and reviewed procedure 2BwVS 1.2.3.1-1, "American Society of Mechanical Engineers (ASME) Surveillance Requirements For 2A Centrifugal Charging Pump And Check Valve 2CV8480A Stroke Test," Revision 1. The inspectors discussed the performance of the test with the system engineer.

b. Observations and Findings

On November 24, the inspectors observed the performance of 2BwVS 1.2.3.1-1. During the pre-job briefing, the system engineer discussed the purpose of the surveillance test, precautions and limitations, prerequisites, responsibilities, contingency actions, and key steps that required operator actions. The inspectors observed the system engineer obtain the required approvals for the commencement of the surveillance test and properly complete the prerequisites. During the performance of 2BwVS 1.2.3.1-1, the inspectors observed proper communications between the unit supervisor, nuclear station operators, and the system engineer; proper self-checking; and proper independent verifications.

The inspectors found that the required acceptance criteria for pump suction pressure, pump differential pressure, total flow, and pump vibration were met. The inspectors observed an acceptable flow rate through 2CV8480A, the 2A centrifugal charging pump minimum flow check valve, to verify a full stroke of the valve. The inspectors observed the proper operation of the 2A charging pump lubricating oil system and cubical coolers. The inspectors verified that the pump's performance exceeded the UFSAR pump performance curve's minimum design performance.

c. Conclusions

On November 24, the inspectors observed the performance of 2BwVS 1.2.3.1-1 and concluded that the surveillance test was properly performed and acceptance criteria were met. The pump's performance exceeded the minimum required performance specified in the UFSAR.

M8 Miscellaneous Maintenance Issues (92902)

- M8.1 (Closed) Violation 50-457/96011-04a and 50-457/96011-04b: Failure To Follow Two Procedures Regarding Maintenance Alterations and Operational Electrical Lineups. The licensee returned a radwaste building ventilation damper to service in the failed open

condition following maintenance, and failed to complete Procedure BwOP MP-08, "Restoring Unit 2 Main Generator, Main Power Transformers 2E and 2W, and Unit Auxiliary Transformers 241-1 and 241-2." The inspectors verified that the licensee completed the corrective actions for both examples and that there has been no recurrence of these specific problems. This violation is closed.

- M8.2 (Closed) LER 50-456/95020-00: On December 23, 1995, power range channel N43 was placed in test for calibration. Power range N42 indication began swinging by 10 percent power, causing spurious rate trips. No other indications of changing reactor power were present. The licensee invoked TS 3.0.3 since both N42 and N43 were inoperable. Channel N43 was restored and TS 3.0.3 was exited. Power range channel N42 was subsequently determined to have a power supply failure. The power supply was replaced. The licensee performed an analysis of the failure mode for maintenance rule applicability and determined that the failure was not maintenance preventable. The inspectors concluded that the licensee's corrective actions were appropriate. This item is closed.

III. Engineering

E2 Engineering Support of Facilities and Equipment

E2.1 Review of Plant Modifications

a. Inspection Scope (37551)

The inspectors reviewed the work packages, modification approval letters, modification approval letter addendums, modification test procedures, and 10 CFR 50.59 safety evaluations, for modifications E20-2-96-250, "2CV-110A/2CV-111A Trim Change"; E20-2-96-256, "Installation of Permanent Power Source For Temporary 125 Volt DC Battery Chargers"; and E20-2-97-225, "Containment Recirculation Sump Enhancement." The inspectors reviewed procedures NEP-04-02, "Exempt Changes," Revision 0; BwAP 2321-21, "Exempt Changes," Revision 3; and NSWP-A-04, "10 CFR 50.59 Safety Evaluation Process," Revision 0. The inspectors performed a walkdown of accessible portions of the installed modifications.

b. Observations and Findings

The inspectors reviewed the completed work packages for modifications E20-2-96-250, E20-2-96-256, and E20-2-97-225. The inspectors noted that the work packages were complete. Work procedures appeared to contain sufficient detail for the installation of the modifications. Procedure steps were properly initialed and verified where required. The pre-job briefing, foreign material exclusion, and calibration documentation were included and appeared complete.

The inspectors reviewed the modification approval letters and any modification approval letter addendums for modifications E20-2-96-250, E20-2-96-256, and E20-2-97-225. Each letter included a description of the modification, a discussion of applicable codes and specifications, a brief discussion of the 10 CFR 50.59 safety evaluation, a list of

drawings affected by the modification, construction and modification testing requirements, training requirements, and a list of procedures requiring review and revision. When the modifications were required to be changed following their initial approval, the inspectors found appropriate addendums to the modification approval letters containing a discussion of the reasons for the change. The inspectors verified compliance with procedures NRP-04-02, "Exempt Changes," and BwAP 2321-21, "Exempt Changes," in the processing of the modifications.

The inspectors reviewed the post-modification test procedures performed following the completion of the installation of each of the modifications. The inspectors found detailed procedures for each of the modifications. The post-modification test procedures appeared adequate to ensure the modification performed as designed.

The inspectors reviewed the 10 CFR 50.59 safety evaluations for each modification. The inspectors concluded that each safety evaluation was well written, complete, and prepared in accordance with Procedure NSWP-A-04, "10 CFR 50.59 Safety Evaluation Process." The safety evaluations appeared adequate to determine if an unreviewed safety question existed. The inspectors noted that changes to approved modification packages received additional 10 CFR 50.59 safety evaluations prior to their approval and installation.

The inspectors looked at the physical installation of accessible modification hardware and compared the installation to the documentation contained in the work packages and noted that the field installation appeared to match specifications in the work package.

c. Conclusions

The inspectors performed a review of three safety-related A2R06 modifications and concluded that the modifications were processed in accordance with the appropriate procedures, were properly documented, and received a proper safety evaluation. Revisions to the modifications were properly documented and received additional safety evaluations prior to approval and installation. The inspectors concluded that post-modification test procedures were well written and adequately verified that the modification performed as designed. The physical installation of modification hardware appeared to match the work package specifications.

E8 Miscellaneous Engineering Issues (92903)

- E8.1 (Closed) Unresolved Item 50-456/96014-06: Roll Up Fire Doors Failure To Close. On July 3, 1996, mechanical maintenance personnel performed surveillance BwMS 3350-001, "Fire and Security Door Semi-Annual Inspection," Revision 0, and several roll-up doors did not go closed as expected with outside air ventilation to the room. A violation was issued in Inspection Report No. 96016 (50-456/96016-04(DRS); 50-457/96016-04(DRS)) for the failure of the doors to close. This issue will be tracked by that violation. This item is closed.
- E8.2 (Closed) Violation 50-456/96021-03(DRP); 50-457/96021-03(DRP): On December 23, 1996, the licensee identified a through wall leak on ASME Class 3 piping in the 1A essential service water (SX) system. The licensee failed to remove the 1A SX train from service and take corrective actions as required by ASME Boiler and Pressure Vessel

Code, Section XI. Part 50.55a(g)(4) of 10 CFR requires that all components which are classified as ASME Code Class 3 must meet the requirements set forth in ASME Section XI. The inspectors reviewed the corrective actions taken by the licensee in response to this violation and considered them to be adequate. This violation is closed.

- E8.3 (Closed) Violation 50-456/97005-04(DRP); 50-457/97005-04(DRP): Failure To Write 10 CFR 50.59 Safety Evaluation. The licensee blocked open the door between the auxiliary building ventilation exhaust plenum and the auxiliary building to perform modification work on the auxiliary building exhaust fans and did not perform a 10 CFR 50.59 safety evaluation. The inspectors verified that the licensee changed BwAP 1110-3, "Plant Barrier Impairment Program," Revision 5, to clarify that impairments to ventilation boundaries described in the UFSAR need to be screened for safety evaluations. The inspectors had no further concerns. This item is closed.
- E8.4 (Closed) LER 50-456/96011-00: On September 24, 1996, the licensee determined, during the performance of a surveillance test, that four roll-up doors separating areas containing safety-related equipment from the turbine building failed to fully close under full ventilation conditions. A review performed by system engineering personnel indicated that the roll-up doors were not tested following installation. The licensee's immediate corrective actions were to close the four roll-up doors. The event was documented in Inspection Report No. 50-456/96014 as an Unresolved Item pending the results of additional roll-up door testing and a follow up inspection by regional fire protection specialists. The inspectors determined that since 1991 the roll-up doors were inoperable and did not meet the 3-hour rated fire barrier requirement. An apparent violation was written and documented in Inspection Report No. 50-456/96016. The licensee's immediate corrective actions have been completed and were appropriate. The licensee's long-term corrective actions have been identified but have not been completed. The tracking of the licensee's long-term corrective actions will be done by Violation 50-456/96016-04. This item is closed.
- E8.5 (Closed) LER 50-456/95013-00 and 50-456/95013-01: On October 12 and 25, 1995, the licensee identified that several incorrect cable separations assumptions could potentially result in the inability to achieve and maintain safe shutdown conditions if a fire occurred in certain fire zones. An apparent violation was written and documented in Inspection Report No. 50-456/96016, and subsequently received escalated enforcement without a civil penalty. Design modifications are currently in progress to correct the deficiencies. The tracking of the licensee's long-term corrective actions will be done by Violation 50-456/96016-03. This item is closed.

IV. Plant Support

S1 Conduct of Security and Safeguards Activities

S1.1 Vehicle Search.

a. Inspection Scope (71750)

The inspectors performed an inspection of the licensee's vehicle search program. The inspectors reviewed BSP-09, "Vehicle Entry/Exit Procedure", Revision 7; reviewed

associated special security instructions; interviewed security personnel; and observed the performance of three vehicle searches.

b. Observations and Findings

On November 21, the inspectors monitored the performance of two vehicle entry searches and one exit search performed at the entrance to the protected area in accordance with BSP-09. All required areas of the vehicles were searched including the engine, passenger compartment, cargo compartment, and the undercarriage. No prohibited items were discovered, and no problems were noted by the inspectors. The inspectors monitored security personnel control of the vehicle drivers within the gate area. Driver access was controlled in accordance with BSP-09. Inspectors also monitored the control of the main gates during the vehicle searches. Actions taken by the security individuals including coordinating the opening and closing of the outer gate, raising and lowering the vehicle barrier gate arm, and opening and closing the inner gate were in accordance with BSP-09. Inspectors reviewed the security procedures maintained at the main entrance guard shack. The copy of BSP-09 maintained at the guard shack was the latest revision and all special security instructions applicable to BSP-09 were enclosed.

c. Conclusions

The inspectors concluded that three vehicle searches observed on November 21 at the entrance to the protected area were performed in accordance with the appropriate licensee procedure and that the proper revision of the procedure was used. No problems were observed.

V. Management Meetings

X1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspection on December 15, 1997. 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.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

- *T. Tulon, Site Vice President
- *K. Schwartz, Station Manager
 - A. Haeger, Health Physics and Chemistry Supervisor
- *R. Byers, Maintenance Superintendent
 - R. Graham, Work Control Superintendent
 - T. Simpkin, Regulatory Assurance Supervisor
 - C. Dunn, System Engineering Supervisor
- *J. Nalewajka, Industrial Safety Engineering Group Supervisor
- *C. Herzog, Executive Assistant
- *J. Meister, Engineering Manager
- *R. Wegner, Operations Manager
- *M. Cassidy, Regulatory Assurance - NRC Coordinator

NRC

- M. Jordan, Chief, Reactor Projects Branch 3
- *C. Phillips, Senior Resident Inspector
- *J. Adams, Resident Inspector
 - D. Pelton, Resident Inspector
 - T. Tongue, Project Engineer

IDNS

- *T. Esper

* Denotes those who attended the exit interview conducted on December 15, 1997.

INSPECTION PROCEDURES USED

IP 37551:	Onsite Engineering
IP 627C7:	Maintenance Observations
IP 61726:	Surveillance Observations
IP 71707:	Plant Operations
IP 71714:	Cold Weather Preparations
IP 71750:	Plant Support Activities
IP 92700:	Onsite Followup of Written Reports of Nonroutine Events at Power Reactor Facilities
IP 92901:	Followup - Plant Operations
IP 92902:	Followup - Plant Maintenance
IP 92903:	Followup - Engineering

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-456/97019-01	VIO	Failure to follow procedures
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Closed

50-457/96011-04a	VIO	Failure to follow procedures
50-457/96011-04b	VIO	Failure to follow procedures
50-456/96014-06	URI	Roll up fire doors failure to close
50-456/96021-03(DRP);	VIO	Failure to meet ASME Boiler and Pressure Vessel Code
50-457/96021-03(DRP)		
50-456/97005-04(DRP);	VIO	Failure to write a 10 CFR 50.59 safety evaluation
50-457/97005-04(DRP)		
50-456/95013-00	LER	Incorrect cable separations for fire protection
50-456/95013-01	LER	Incorrect cable separations for fire protection
50-456/95020-00	LER	Power range channel indication oscillations
50-457/96004-00	LER	TS 3.0.3 was not entered as required by TS 3.4.6.1 when leak detection systems were inoperable
50-456/96011-00	LER	Fire doors failure to close

Discussed

50-456/96016-03(DRS);	VIO	Incorrect cable separation assumptions
50-457/96016-03(DRS)		
50-456/96016-04(DRS);	VIO	Roll up fire doors failure to test
50-457/96016-04(DRS)		

LIST OF ACRONYMS USED

ASME	American Society of Mechanical Engineers
BDPS	Boron Dilution Prevention System
CFR	Code of Federal Regulations
INPO	Institute for Nuclear Power
LER	Licensee Event Report
MSIV	Main Steam Isolation Valve
NRC	Nuclear Regulatory Commission
NSO	Nuclear Station Operator
OOS	Out-of-Service
PDR	Public Document Room
PIF	Problem Identification Form
SX	Essential Service Water
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item
VIO	Violation