

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

REPORT NO. 50-456/95013; 50-457/95013

FACILITY

Braidwood Station, Units 1 and 2

License Nos. NPF-72; NPF-77

LICENSEE

Commonwealth Edison Company
Opus West III
1400 Opus Place
Downers Grove, IL 60515

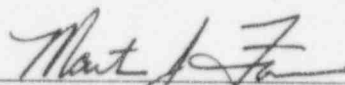
DATES

August 22 through September 30, 1995

INSPECTORS

S. Ray, Acting Senior Resident Inspector
E. Duncan, Resident Inspector
M. Kunowski, Resident Inspector
J. House, Chemistry Specialist
K. Andre, Chemistry Specialist
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APPROVED BY


Martin J. Farber, Acting Chief
Reactor Projects Branch 4

11/8/95
Date

AREAS INSPECTED

A routine, unannounced inspection of operations, engineering, maintenance, and plant support was performed. Safety assessment and quality verification activities were routinely evaluated. Follow-up inspection was performed for non-routine events and for certain previously identified items. Routine inspections were performed in the areas of security and radiochemistry program implementation.

RESULTS

Assessment of Performance

The following assessments are based on activities observed during this report period.

OPERATIONS

- Operator actions associated with an inadvertent power operated relief valve (PORV) actuation were excellent.
- Operations failed to meet Technical Specification action requirements for a radiation monitor failure for the same reasons as those for a similar occurrence on August 10. These reasons included the unit supervisor being distracted by other activities and weak teamwork among shift personnel.
- With the shutdown margin undetermined and one of two source range monitors inoperable, operators failed to properly consider the associated risks before deciding to cooldown until questioned by the inspector.
- Operations department personnel failed to properly identify and address significant oil leakage on pumps used for water treatment although operators were aware of the condition.
- A large number of operability determinations and a handwritten index limited the ease of use of these determinations. As a result, operations failed to identify the existence of two operability determinations prior to taking a safety-related system out of service.
- Operations response to problems encountered during a Unit 1 main turbine emergency trip header surveillance was good, however, distractions caused by these problems resulted in a missed technical specification action requirement for an inoperable radiation monitor.
- During new fuel movements, the inspectors noted that actions in addition to those specified in the procedure were taken. The inspectors concluded that recent management attention to revise procedures to reflect actual plant operations had not been totally effective.

MAINTENANCE

- Instrument Maintenance Department (IMD) technicians failed to properly perform a surveillance and, as a result, a PORV actuation occurred at full power.
- Due to poor craft capability, an essential service water (SX) cooler gasket was improperly reinstalled following maintenance.

- Numerous delays which resulted in performance of the surveillance of control rod drive mechanism power fuses at power, indicated a lack of conservative surveillance schedule implementation. The at-power surveillance was thoroughly briefed and well executed.

ENGINEERING

- The licensee appropriately addressed a weakness in the design of their solid state protection system.
- Good engineering involvement resulted in the identification of a root cause for a longstanding problem concerning the inability to fully close the essential service water pump suction isolation valves.
- Communications between engineering and maintenance concerning the decision to use the new fuel elevator controller without performing a technical review were poor.

PLANT SUPPORT

- Implementation of the physical security program was very good. The program was well managed. A biometrics hand geometry system was successfully set up for unescorted access entry to the protected area.
- Good performance by security force members was observed. Security staffing resources were adequate to meet security plan commitments; however, frequent but not excessive overtime was required to accommodate unscheduled call-offs and non-routine event coverage. NRC guidelines in the area of overtime were adhered to. Security staff members demonstrated teamwork, initiative, professionalism, and program ownership.
- Substantial progress was achieved in the goal of a security computer system replacement scheduled to be installed in December 1995.
- Negative trends in the number of door and perimeter hardware failures were noted during the previous 5 months.
- A significant weakness in the contingency response program was identified in that critical vital area target sets, timelines, and deployment strategies have not been determined. Tactical response capability was improved through the acquisition of new contingency weapons. Training in these new weapons was ongoing at the time of the inspection.
- Licensee performance in the radiochemistry confirmatory measurements program was excellent, with all agreements in 142 comparisons. The radiochemistry quality assurance program continued to be effective in maintaining laboratory performance.

Summary of Open Items

Violations: Section 1.2

Unresolved Items: None identified

Inspection Follow-Up Items: Sections 2.2, 2.5, 3.3, and 4.2

Non-cited Violations: Sections 1.5 and 2.1

INSPECTION DETAILS

1.0 OPERATIONS

NRC Inspection Procedure 71707 was used in the performance of an inspection of ongoing plant operations.

- 1.1 Inadvertent Power Operated Relief (PORV) Valve Actuation On August 22, during routine temperature loop surveillance testing, a "PZR PORV OR SAF VLV OPEN" alarm was received in the control room indicating that either a PORV or safety valve was open. The nuclear station operator (NSO) observed that the "A" PORV indicated open, and determined that the controlling channel pressure indicator was off-scale high although the remaining three channels were below the normal pressure band and rapidly decreasing. The operator informed the unit supervisor of the condition and immediately switched the pressurizer pressure control selector switch to a properly functioning channel. Following that action, the PORV closed and pressure returned to normal. During the transient, pressurizer pressure decreased about 85 psig before being restored to normal.

The inspectors reviewed the event and concluded that all operator actions were excellent. The surveillance was completed without further complications, however, the root cause was traced to the improper performance of the surveillance (section 2.1).

- 1.2 Radiation Monitor Technical Specification Violation On September 8, the main control room outside air intake radiation monitor for the OA train of control room ventilation alarmed and indicated low flow which rendered the radiation monitor inoperable.

In accordance with Technical Specification (TS) 3.3.3.1 this condition required that within 1 hour the licensee shift to the redundant train of control room ventilation or isolate the control room ventilation system and initiate operation of the control room make-up system. However, due to distractions caused by problems encountered during the performance of an unrelated unit 1 surveillance and weak teamwork among shift personnel, the action requirements were not met until 2 hours after the TS allowed outage time had expired.

A similar event as described in inspection report 95010 occurred on August 10. In that case, operations failed to meet TS action requirements until about 27 minutes after the allowed outage time had expired for similar reasons.

The inspectors concluded that because TS 3.3.3.1 action requirements were not met within 1 hour, the event as described above was a violation (95013-01).

- 1.3 Control of Reactivity During Unit 1 Shutdown On September 30, operators were ready to begin cooling down the reactor coolant system from Mode 3 to Mode 4. At that time, the reactor had been in Mode 3 for about eight hours, but the operators had not completed a shutdown margin (SDM) calculation because the data tables did not extend to the actual fuel burnup condition. In addition, source range channel N-31 was inoperable. Technical Specification time requirements for both conditions (SDM calculation and inoperable source range channel action requirements) had not been exceeded. However, the inspectors questioned the prudence of conducting the positive reactivity addition associated with the cooldown when the SDM of the reactor was unknown. The unit supervisor then decided to delay the cooldown until the completion of the SDM calculation.

The inspectors concluded that the operators failed to display a conservative operating philosophy and proper safety focus. With the SDM undetermined and one of two source range monitors inoperable, the operators had not properly considered the associated risks before deciding to begin a cooldown.

- 1.4 Problem Identification Weaknesses On September 15, the inspectors identified that the OB recycle pump used for nonsafety-related water treatment had a large amount of oil on the pump skid and the oiler reservoir was empty.

The inspectors discussed this issue with an equipment operator who indicated that the pump was not used due to excessive oil leakage. The inspectors conducted additional walkdowns and identified that the OB clearwell pump was also in the same condition.

The inspectors brought both these issues to the attention of licensee management who initiated action requests to identify these problems and place caution cards on the pump start switches to warn operators of the condition.

Licensee weaknesses in problem identification have been documented in previous inspection reports. The problems identified by the inspectors and described above indicate that operations department personnel did not identify and take adequate action for significant oil leaks on pumps under their control. The inspectors concluded that the licensee's problem identification process was not effective.

- 1.5 Fuel Movement Observations On September 6, the inspectors observed movement of fuel from the new fuel vault to the spent fuel pool. During these movements, the inspectors noted that actions in addition to those specified in the procedure were taken. The supervisor explained that the additional actions were more conservative than what was in the procedure, and the inspectors agreed. However, no action had been taken to revise the procedure to reflect this change as required by BwAP 100-20, "Procedure Adherence." The procedure was subsequently revised to incorporate the additional actions performed.

Problems with adherence to procedures and performing additional actions without a procedure revision have been documented in previous inspection reports. The above example indicated that recent management attention to revise procedures to reflect actual plant operation has not been totally effective.

10 CFR 50, Appendix B, Criterion V, requires that activities affecting quality be accomplished by procedures of a type appropriate to the circumstances. The event as described above is an example where a procedure was not performed as written. This was a violation of the above requirement. However, this failure constitutes a violation of minor significance and is being treated as a Non-Cited Violation, consistent with Section IV of the NRC Enforcement Policy.

- 1.6 Sodium Hypochlorite Spill. On August 22, a tanker containing sodium hypochlorite, a caustic chemical, arrived onsite for delivery. The fitting on the hose of the tanker was not compatible with the receiving fitting on the hypochlorite storage tank fill line. A station hose, whose fittings were compatible, was attached and the hypochlorite transfer was commenced. During the transfer, the hose broke loose from the tanker. This resulted in a spill of about 100 gallons of sodium hypochlorite which was washed down a storm sewer drain. Due to the amount of hypochlorite released, the licensee made a required notification to the Illinois Environmental Protection Agency.

The licensee performed a root cause investigation and determined that the transfer hose being used was defective and personnel had not properly checked the integrity of the hose prior to use.

The licensee's corrective actions for this event included personally counselling the individuals involved and initiating a revision to the implementing procedure to address the error. The inspectors reviewed this event and concluded that corrective actions appeared adequate to prevent recurrence.

- 1.7 Control and Use of Operability Determinations On August 28, the licensee identified that the suction valve, 1SI8923A, for the 1A safety injection (SI) pump had been taken out of service (OOS) for maintenance without consideration of previous operability determinations. One determination, written in 1992, limited the duration the valve could be OOS to 72 hours. The other determination, written in 1994, limited the OOS to 1 hour. The exact bases for the time limits were not clearly stated in the determinations. While attempting to resolve this issue, the licensee became aware of a third determination, made by Byron station. That determination, with a detailed discussion of its bases, allowed the valve to be OOS for 7 days. The licensee concluded that the determination from Byron was the appropriate one. The inspectors reviewed this evaluation and concluded that this decision was correct.

Following a review of the operability determination file (four large three-ring binders) and discussions with control room personnel, the inspectors concluded that the large number of determinations and the

handwritten index limited the overall usability and the identification of conflicting and no longer applicable determinations. This appeared to have contributed to the failure to identify the existence of the two determinations prior to taking the valve OOS. The licensee indicated that as part of the corrective actions for this event, the file was computerized. The inspectors reviewed these corrective actions and have no further concerns.

- 1.8 Unit 1 Turbine Trip Surveillance Problem On September 8, during a quarterly surveillance of the Unit 1 main turbine emergency trip header, proper system pressure could not be restored. In part, the purpose of this surveillance was to verify that the emergency trip solenoid valve, 20/ET, opened to trip the turbine when required. The licensee surmised that either there was some debris on the seat of 20/ET that prevented returning it to its normally fully closed position or debris in an adjacent flow orifice. Exiting the surveillance, by returning the main control room switch from the test position to the normal position could have resulted in a turbine trip or in restoration of normal system pressure. The licensee was constrained by a 6-hour LCO that required the reactor to be in mode 3 if the pressure could not be restored and by an end-of-cycle lack of boron in the reactor coolant system that precluded reducing power below the turbine trip-reactor trip P-8 permissive of 30 percent reactor power.

After discussions between system engineering and operations management, the licensee decided to return the switch to the normal position and begin the scheduled refueling outage early if the turbine and reactor tripped. System pressure returned to normal when the switch was returned to the normal position. Work requests were subsequently written to examine the orifice and valve during the upcoming outage. The surveillance, as completed, verified that the valve opened as required and the trip function was operable. The decision to not reduce reactor power appeared reasonable since the lack of boron could have resulted in a large xenon transient. Overall, the event was well handled by the operations staff; however, as discussed in Section 1.2, it distracted the control room staff from meeting a radiation monitor failure TS action requirement.

- 1.9 Follow-Up on Previously Opened Items A review of previously opened items was performed per NRC Inspection Procedure 92901.

(Open) Unresolved Item 95010-01: Waste Gas Valve Mispositioning Events. The licensee investigated these events and determined that for the last two occurrences, waste gas flow indicated zero although the isolation valve was throttled open.

In addition, the licensee placed a lock on the instrument panel door to prevent unauthorized personnel from gaining access to the isolation valve. Since the time this action has been taken, no additional mispositioning events have occurred.

At the end of the inspection period, the licensee had not determined a root cause for the remaining three events.

(Closed) Inspection Follow-Up Item 95010-02: Control Room Ventilation (VC) Surveillance Failure. In addition to leaking pressure seals, the licensee identified that the return air damper positioner in the auxiliary electric equipment room required adjustment. Following damper positioner adjustment, the OB control room ventilation system was returned to service.

The inspectors reviewed the licensee's troubleshooting activities and corrective actions for this event. The inspectors concluded that the licensee's response to this event was good. This item is closed.

(Closed) Inspection Follow-Up Item 95009-01: Age-Related Failure of Main Control Room Annunciator Cards. In addition to the five card failures that had occurred when this item was initially reviewed, two additional failures occurred, both involving 14 annunciators. The licensee recently completed the replacement of 16 safety-related and over 80 non-safety related cards on Unit 1 and was preparing to start a similar replacement on Unit 2. The inspectors concluded that efforts to address the age-related failure issue were adequate. This item is closed.

2.0 MAINTENANCE

NRC Inspection Procedures 62703 and 61726 were used to perform an inspection of maintenance and testing activities.

2.1 Inadvertent Power Operated Relief Valve (PORV) Actuation The licensee determined that the root cause for the inadvertent PORV actuation discussed in section 1.1 was the failure of Instrument Maintenance Department (IMD) technicians to follow the surveillance procedure. Two test plugs were not plugged into the correct instrument rack receptacles as specified in the surveillance. This action incorrectly inserted signals into the controlling channel for the pressurizer pressure control system causing that channel to fail high. Contributing factors included:

- The selected controlling pressure channel was not electrically isolated from the temperature loop being tested.
- Test plug labels were not replaced following recent cable repairs making it more difficult to identify the correct plugs.
- Personnel were not aware that the MESAC (automatic circuitry checking) system did not warn when two plugs were interchanged.

As part of the licensee's immediate corrective actions, the surveillance procedure was revised to ensure that the channel being tested was not the channel controlling the pressure control system, and the MESAC cables were relabeled. In the future, the licensee planned to

reconfigure the MESAC system to warn personnel when two plugs have been interchanged.

10 CFR 50, Appendix B, Criterion V, requires that activities affecting quality be accomplished as prescribed by documented procedures. The events as described above was an example of a violation of this requirement. However, this licensee-identified and corrected violation is being treated as a Non-Cited Violation, consistent with Section VII of the NRC Enforcement Policy.

- 2.2 Residual Heat Removal (RHR) Pump Maintenance During a scheduled mechanical seal replacement for the 1B RHR pump, the licensee discovered shaft runout readings which were significantly out of tolerance which necessitated the replacement of the motor rotor. A licensee investigation revealed that the root cause was a loose upper motor bearing locknut.

This is an Inspection Follow-Up Item (95013-02) pending further NRC review.

- 2.3 Essential Service Water (SX) Lube Oil Cooler Gasket Installation Error On September 12, maintenance personnel were unsure of the proper orientation of the 1A SX lube oil cooler gasket they had installed. As a result, a system engineer identified that the gasket was incorrectly oriented when the cooler was reassembled. Discussions with maintenance personnel identified that the gasket was installed in the same orientation in which it was removed. The licensee performed a follow-up investigation and determined that the gasket was last replaced in March 1994, had apparently been incorrectly installed, and the error had not been identified and corrected. In addition, the licensee determined that the SX pump was operable, and the safety significance of the error was minimal. The inspectors followed up on this event and identified the following issues:

Gasket Installation Craft Skill Concerns The inspectors interviewed the first line supervisor (FLS) to address concerns that the gasket was re-installed incorrectly. The FLS indicated that although there was some question about the orientation, rotating the gasket 90 degrees would bypass 50 percent of the flow and provide improved cold weather temperature control. He also stated that this is what was done to convert a four-pass cooler to a two-pass cooler.

The inspectors followed up on this information and determined that a four-pass cooler can be converted to a two-pass cooler by rotating the cooler head (not the gasket) 90 degrees. In addition, the inspectors determined that the SX lube oil cooler is a two-pass design and if the head was rotated 90 degrees, flow would be isolated. Also, if the gasket was rotated 90 degrees, only about 10 percent (not 50 percent) of the SX flow would bypass the cooler. Based upon these discussions, the inspectors concluded that the knowledge level of the FLS was weak and strongly contributed to the orientation error.

On March 24, 1995, the licensee identified a similar occurrence in which a craft skill error resulted in a mispositioned heat exchanger gasket on the 2A RHR cooler. In that event, SX flow was degraded significantly and rendered the cooler inoperable.

The inspectors concluded that although the safety significance of this particular event was low due to the small reduction in flow, the recurrence of heat exchanger gasket orientation craft skill problems was significant.

Gasket Configuration The inspectors reviewed the design of the SX lube oil cooler head which is semi-hemispherical with a divider plate exactly separating the head into two equal volumes. The installed gasket, however, did not match this pattern and contained an additional section which was not required. The inspectors determined that a gasket exactly matching the head configuration was available and questioned whether the installed gasket was appropriate. The inspectors concluded that the maintenance workers lacked this questioning attitude.

- 2.4 At-Power Surveillance of Control Rod Drive Mechanism Power Fuses On September 5, the inspectors observed the 18-month surveillance of the Unit 1 260V power fuses for the control rod drive mechanisms. No problems were observed. Unlike past practice, the surveillance was conducted with the reactor at 100 percent power. A thorough pre-job discussion was conducted in the control room by a senior licensee manager with personnel from the electrical maintenance, system engineering, site quality verification (SQV), and operations departments. Procedural requirements and contingencies were well covered. Personnel directly involved in the fuse testing and the SQV representative had previously gone through mock-up training in preparation for the surveillance.

The surveillance was conducted with the reactor at full power because several delays in the original surveillance schedule and the need to meet electrical demands during the ongoing hot weather precluded earlier completion. Although the surveillance was well planned and executed, the delays represented a lack of conservative surveillance schedule implementation.

- 2.5 On-line Maintenance The inspectors reviewed on-line maintenance for Unit 1 pumps and associated equipment of the following systems: 1A and 1B residual heat removal; 1A safety injection; 1A containment spray; and 1B essential service water. The work was conducted prior to the upcoming Unit 1 refueling outage in an effort to reduce shutdown risk. Previous reviews of online maintenance activities are discussed in Inspection Reports 94029 and 95010.

Although the allowed outage times for these systems were not exceeded, the need to improve the scheduling and execution of online maintenance was noted by the inspectors. Problems that occurred included not identifying all of the valves that needed to be closed during initial out-of-services, coordinating floor plug removal and auxiliary building

door openings to ensure proper room differential pressures were maintained (a problem in this area resulted in an Licensee Event Report), timely communications with engineering for an impeller runout problem, ensuring the correct parts were available prior to the job, and providing adequate installation instructions (a specific problem with installation of a lube oil cooler gasket is discussed in section 2.3)

As a result of schedule execution problems, the licensee was conducting a lessons-learned assessment on several of the jobs. The results of that assessment will be reviewed as an Inspection Follow-Up Item (95013-03).

2.6 Material Condition In response to concerns expressed by the NRC and an industry peer group, the licensee evaluated the material condition issue to determine why the condition had declined. The root cause was identified as the failure to formulate and communicate clear standards to plant personnel. To address this failure, the licensee developed the "Material Condition Improvement Strategy," which included standards and expectations, plans and schedules, and measurements of success. Ongoing and recently completed material condition improvements, such as the "clean sweeps" of the condensate/condensate booster pump skids and the replacement of leaking seals on the Unit 1 residual heat removal pumps, were incorporated into the Strategy along with efforts in reducing boric acid leaks and operator workarounds and in improving work execution and housekeeping. The strategy is under the aegis of a senior station manager and is intended to restore plant equipment to a state of original condition or better. The strategy was reviewed by the inspectors and appeared to be an adequate plan, if fully implemented, to address the station's material condition problem.

2.7 Work Control Process Self-Assessment Earlier in 1995, the licensee conducted a self-assessment of the station work control process. The assessment team included the site vice president, the station manager, and the maintenance, operations, and engineering superintendents. Five key issues were identified by the team and action items were assigned with due dates to address the issues. The issues were:

- increase the support of the work control process by other departments
- develop and implement a material condition improvement plan
- improve forecasting of maintenance department staff availability for scheduled work
- provide accurate job status information
- improve use of the minor maintenance team

Several corrective actions taken in response to the assessment findings included changing from a 9-week to a 12-week work schedule and the assignment of specific personnel to oversee work from when it is scheduled to when it is worked, so-called "work-week managers."

The inspectors concluded that the assessment was a strong effort by station management to identify and correct problems in the work control process. The corrective actions appeared appropriate.

2.8 Follow-up on Non-Routine Events NRC Inspection Procedures 90712 and 92700 were used to perform a review of licensee event reports (LERs).

(Closed) LER 50-457/95003, Revision 0: Unit Shutdown Due To Excessive Reactor Coolant System (RCS) Leakage. As discussed in inspection report 95008, on April 29, unit 2 was shutdown due to excessive valve packing leakage from the RCS bypass valves.

The licensee determined that the root cause of the event was improper installation of the packing for two of these valves. This was due to a craft skill error which occurred when measurements were taken to determine the valve leakoff line location in the valve stuffing box.

As part of the licensee's immediate corrective actions, all four RCS bypass valves were repacked. In addition, all mechanical maintenance personnel received training on this event to prevent recurrence. The inspectors reviewed the licensee's corrective actions and concluded that they appeared adequate. This LER is closed.

2.9 Follow-up on Previously Opened Items A review of previously opened items was performed per NRC Inspection Procedure 92902.

(Closed) Inspection Follow-Up Item 95010-04: Expansion Joint Tie Rods Missing on the 2A Emergency Diesel Generator (EDG). The licensee performed a final operability determination and concluded that the EDG was operable. The inspectors reviewed the operability determination and had no further questions. This item is closed.

(Closed) Inspection Follow-Up Item 95009-03: Preservice Installation Deficiencies. No additional preservice installation deficiencies were identified during the inspection period. The inspectors will address future preservice installation deficiency discoveries on a case by case basis. This item is closed.

(Closed) Inspection Follow-Up Item 95009-04: Procedure Used by Offsite Commonwealth Edison Personnel for Adding Oil to Braidwood Station's Onsite Main Power Transformers. The procedure lacked specific guidance on the quantity of oil to add to the transformers; however, the station was in the process of addressing this and the issue of control of offsite personnel in the station switchyard (identified by site quality verification). Systems engineering and electrical maintenance managers responsible for the onsite work of the offsite personnel stated that actions were underway to ensure that all procedures used for work on the transformers and in the switchyard have been reviewed and approved by the station and that the work was done in accordance with the station action request system. The station's planned actions to control the onsite work of offsite personnel appeared appropriate. Implementation

of these actions will be reviewed during future inspections. This item is closed.

3.0 ENGINEERING

NRC Inspection Procedure 37551 was used to perform an onsite inspection of the engineering function.

- 3.1 Modification to the Westinghouse Solid State Protection System In February 1995, the NRC was informed of a condition that could result in the failure of one train of the Westinghouse solid state protection system (SSPS) during a main steamline break accident. If a single failure of the other SSPS train is considered, as is required in the high energy line break accident methodology, both trains of SSPS would be rendered inoperable and no engineered safety feature (ESF) actuations would be automatically available to mitigate the consequences of a main steamline break. Subsequently, the NRC issued Information Notice 95-10 which requested licensees to review this information for applicability to their facilities and consider actions, as appropriate, to avoid similar problems.

Following an evaluation, the licensee concluded that unit 2 was vulnerable to this event. In response, the licensee developed a modification to add a separate fuse for the protection system dc logic power supplies to isolate them from the fuse for the plant system trip activation circuits. Until the modification is completed, the licensee will rely on operator action to mitigate a loss of automatic ESF actuation capability.

The inspectors reviewed the licensee's response and concluded that the licensee was appropriately addressing the issue.

- 3.2 Unauthorized Temporary Alterations Recently, an inspectors identified that a temporary fan used to provide battery room ventilation had not been reviewed as a temporary alteration. As part of their corrective actions, the licensee performed a plant walkdown to determine if other unreviewed configuration changes existed in the plant. As a result, 25 items which appeared to have not undergone a technical review prior to installation were identified. The inspectors reviewed these items, concluded that none of the items were safety significant, and identified the following issue:

New Fuel Elevator Controller A nonsafety-related controller for the new fuel elevator, which had a plug-in attachment, was hardwired into the system without a technical review. During fuel movement observations, the inspectors identified that although the licensee was aware that a technical review had not been completed, the controller was used anyway. When brought to the attention of the fuel handling supervisor, all fuel movements were suspended until the technical review was completed.

Further discussions with the licensee revealed that the engineering department made an informed decision to move fuel without the proper

review since the configuration change did not affect the controller circuitry. However, the fuel handling supervisor was not part of the decision-making process and suspended fuel movements when made aware of the condition.

The inspectors concluded that the decision to suspend fuel movements was conservative. In addition, the inspectors concluded that communications between engineering and maintenance concerning the decision use the new fuel elevator controller without performing a technical review was poor.

- 3.3 2A Diesel Generator Operability Determination Due To Jacket Water Leak
In late September, the inspectors observed a leak from the 2A diesel generator (DG) jacket water pressure ratio relay, a non-safety related component. The system engineer for the DGs indicated that when he last observed the leak it was smaller, and in his judgment there was no need to perform a formal operability determination until the leak rate exceeded about 3 gallons per hour. He concluded from his review of the leak at its current rate that there still existed no operability concern, given that the relay was not a safety-related component, was readily isolable, and the standpipe of the jacket water subsystem was equipped with an automatic makeup feature. To the inspectors, the engineer's conclusion was not conservative. The leak rate appeared close to the 3 gallons per hour limit and the automatic makeup feature was not safety-related. The leak was subsequently repaired and in a followup to the inspectors' concern, the system engineer identified by calculation that the capacity of the standpipe was approximately 100 gallons less than the 590-gallon value listed in the Updated Final Safety Analysis Report (UFSAR). The engineer's initial review of this discrepancy indicated that there was no operability concern; however, a procedure was written for manually refilling the standpipe and site engineering was tasked with resolving the discrepancy. The results of that resolution will be reviewed during a future inspection (IFI 95013-04).

- 3.4 Follow-up on Previously Opened Items NRC Inspection Procedure 92903 was used to perform a review of previously opened items. The following item was closed:

(Closed) Inspection Follow-Up Item 95008-04: Excessive Seal Leakage on 2B SX Pump. The licensee performed testing and concluded that the mechanical stops for the 2B SX pump suction butterfly valve were set incorrectly. This resulted in the valve reaching the mechanical stop prior to fully seating. This same problem was also discovered on other similar valves.

The inspectors concluded that this was an example of good identification of a root cause for a longstanding material condition problem.

4.0 PLANT SUPPORT

NRC Inspection Procedures 71750, 84750, and 81700 were used to perform an inspection of Plant Support activities.

4.1 Confirmatory Measurements Program (IP 84750)

Four plant samples including reactor coolant, liquid waste, reactor coolant stripped gas, and a reactor coolant crud filter, were analyzed for gamma emitting isotopes by the licensee and in the Region III mobile laboratory onsite. Licensee analyses were made using a matrix of the licensee's six detectors normally used for counting plant and effluent samples. In addition, an NRC calibration standard was counted on the licensee's detectors and the NRC detector. The licensee achieved all agreements in 142 comparisons and no significant biases were observed. The inspectors concluded that licensee performance was excellent in the confirmatory measurements program.

The chemistry laboratory quality assurance program was excellent. Statistically based control charts were used to monitor the performance of laboratory instrumentation, and licensee analytical results in laboratory cross check programs were excellent. Lower limits of detection (LLD) calculations for radiochemical analyses had been performed and met technical specification requirements. Radiochemistry trend charts of reactor coolant isotopic analysis (including dose equivalent iodine) indicated that fuel integrity for both units was excellent.

The chemistry technicians (CTs) exhibited good laboratory techniques when obtaining and preparing samples for analysis and were very knowledgeable of laboratory procedures. Improvements in radiation protection practices were noted during collection of a primary coolant sample from the post accident sampling panel. Management of the chemistry organization had improved with both supervisors and CTs demonstrating ownership of laboratory programs.

4.2 Security and Safeguards

4.2.1 Security Training and Qualification The inspectors reviewed the implementation of the training and qualification program. The program was administered by the contract security organization. A complete training staff change recently occurred following the resignation of the security training supervisor. Interviews with the two new training instructors indicated that both were well qualified, experienced, motivated, and professional. A randomly selected sample of training and qualification records showed the records were complete and organized, and that security plan appendix B requirements were met. Training was supported by management as evidenced by the selection of the current staff, integration into the security management organization, and participation in the daily staff meetings.

4.2.2 Biometrics Hand Geometry System On August 1, 1995 the licensee implemented a biometrics hand geometry access control system at the entrance to the protected area. NRC by letter dated July 28, 1995 granted the licensee an exemption to 10 CFR 73.55 badging requirements relating to the issuance, storage and retrieval of picture badges for individuals who have been granted unescorted access to the protected

area. Specifically, the exemption allows individuals to keep their picture badge in their possession when departing the site.

System installation began on June 22, 1995 and completed on June 30, 1995. Tests were conducted to ensure that the security computer would respond with the appropriate alarm and error messages. During July 1995, individuals were required to use the biometrics card readers but the badges remained on site. Full system implementation with badges going offsite began on August 1, 1995. The inspectors observed that the new system functioned well and employees were experienced in using it.

- 4.2.3 Security Computer Replacement Program The licensee intends to install a new security computer system in December 1995 because the current system is no longer supported by vendors. Reliable replacement parts for component failures have been difficult to obtain and most components found are used. Management has supported the replacement program.
- 4.2.4 Security Force Staffing The inspectors observed that the security force staffing level was adequate to meet security plan commitments; however, overtime on a regular basis was required to compensate for unscheduled call offs and non-routine events. Overtime hours worked were within NRC's guidelines and were not considered excessive. Security force performance was good.
- 4.2.5 Improved Response Weapon Capability The licensee improved their armed response capability by the procurement of a new, more accurate weapon system (specific details are considered safeguards information). Training on this new system was in progress at the time of the inspection.
- 4.2.6 Negative Trend In Door and Perimeter Hardware Failures The inspectors review of the licensee's "Monthly Security Status Report" for July 1995 showed a significant negative trend in the number of loggable security event reports in the areas of perimeter zone equipment failures and in security door equipment failures over the previous 12 month period. From August 1994 through March 1995 the licensee averaged 6.25 failures per month; however, for the period of April through July 1995, the average was 49.5 events per month. Door equipment failures averaged .875 for the August 94 through March 1995 compared to 9 per month from April through July 1995. Security management has not evaluated the data for possible explanations but did note that maintenance support for the security system has been very good. Security management committed to conducting a review/assessment of the data. This issue is considered an Inspection Followup Item (95013-05) which will be reviewed in future inspections.
- 4.2.7 Contingency Response Weakness in Ability to Respond to an External Threat The inspectors determined through interviews with station security management that critical equipment analysis by operations and the development of a defensive strategy for deployment of response assets have not been conducted as part of the licensee's contingency planning for responding to an external threat. Management was aware

of this weakness and expressed their commitment to address this issue, noting that several security staff members recently observed the NRC Operational Safeguards Response Evaluation (OSRE) conducted by the Office of Nuclear Reactor Regulation at the LaSalle County Nuclear Power Station from July 10 and July 13, 1995 and plan to use "lessons learned" in their own OSRE preparation. Inspectors will review progress made in this area in future inspections (IFI 95013-06).

4.3 Follow-up on Previously Opened Items A review of previously opened items was performed per NRC Inspection Procedure 92904.

(Closed) Violation 94023-01: Failure to Implement Adequate Compensatory Measures. Licensee corrective actions were reasonable and have been implemented as described in the February 28, 1995, response to the Notice of Violation. This violation is closed.

(Closed) Violation 94023-02: Improper Processing of a Visitor. Licensee corrective actions were reasonable and have been implemented as described in the February 28, 1995, response to the Notice of Violation. This violation is closed.

(Closed) Inspection Follow-Up Item 94010-01: Fitness for Duty (FFD) Procedure Weaknesses. As discussed in inspection report 94010, weaknesses in the licensee's Fitness for Duty procedures were identified as a result of an incident in which a supervisor did not take appropriate action to address an FFD concern regarding another supervisor.

To address this issue, the licensee revised their FFD procedures and training program to emphasize and clarify the responsibilities of all individuals concerning the FFD program. The inspector reviewed these corrective actions and have no further concerns. This item is closed.

5.0 PERSONS CONTACTED AND MANAGEMENT MEETINGS

The inspectors contacted various licensee operations, maintenance, engineering, and plant support personnel throughout the inspection period. Senior personnel are listed below.

At the conclusion of the inspection, the inspectors met with licensee representatives (denoted by *) and summarized the scope and findings of the inspection activities. The licensee did not identify that any of the documents or processes reviewed by the inspectors were proprietary.

- * K. Kaup, Site Vice President
- * T. Tulon, Station Manager
- * A. Haeger, Executive Assistant
- W. McCue, Support Services Director
- * R. Flessner, Site Quality Verification Director
- * G. Groth, Maintenance Superintendent
- D. Skoza, Engineering Superintendent
- R. Byers, Work Control Superintendent

- * D. Miller Technical Services Superintendent
- * K. Bartes, Regulatory Assurance Supervisor
- * E. Roche, Site Vice President Executive Assistant
- A. Checca, System Engineer Supervisor
- * R. Kerr, Engineering and Construction Manager
- * J. Meister, Assistant Engineering and Construction Manager
- * D. Cooper, Operations Manager
- * J. Nalewajka, Integrated Analysis Administrator
- * F. LeSage, Site Quality Verification Audit Supervisor
- * J. Lewand, Regulatory Assurance - NRC Coordinator

6.0 VIOLATIONS FOR WHICH A "NOTICE OF VIOLATION" WILL NOT BE ISSUED

The NRC uses the Notice of Violation as a standard method for formalizing the existence of a violation of a legally binding requirement. However, because the NRC wants to encourage and support licensee's initiatives for self-identification and correction of problems, the NRC will not generally issue a Notice of Violation for a violation that meets the tests of the NRC Enforcement Policy. These tests are: 1) the violation was identified by the licensee; 2) the violation would be categorized as Severity Level IV or V; 3) the violation will be corrected, including measures to prevent recurrence, within a reasonable time period; and 4) it was not a violation that could reasonably be expected to have been prevented by the licensee's corrective action for a previous violation. Violations of regulatory requirements identified during this inspection for which a Notice of Violation will not be issued are discussed in sections 1.5 and 2.1.

7.0 DEFINITIONS

- 7.1 Inspection Follow-Up Items Inspection Follow-Up Items are matters which have been discussed with the licensee, which will be reviewed by the inspectors and which involve some action on the part of the NRC or licensee or both. Inspection Follow-up Items disclosed during the inspection are discussed in sections 2.2, 2.5, 3.3, and 4.2.