

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

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Report No: 50-454/455/96006

Licensee: Commonwealth Edison Company (ComEd)

Facility: Byron Generating Station, Units 1 & 2

Location: Opus West III
1400 Opus Place
Downers Grove, IL 60515

Dates: July 3 - August 17, 1996

Inspectors: H. Peterson, Senior Resident Inspector
N. Hilton, Resident Inspector
G. Pirtle, Regional Security Specialist
J. Foster, Senior Emergency Preparedness Analyst
R. Jickling, Emergency Preparedness Analyst
C. Thompson, Illinois Dept. of Nuclear Safety

Approved by: Lewis F. Miller, Jr., Chief
Reactor Projects Branch 4

EXECUTIVE SUMMARY

Byron Generating Station, Units 1 & 2 NRC Inspection Report 50-454/455/96006

This integrated inspection included aspects of licensee operations, engineering, maintenance, and plant support. This report covers a 4-week period of resident inspection; in addition, it includes the results of announced inspections by a regional security specialist and two regional emergency preparedness specialists.

Operations

- Corrective actions resulting from the discovery of an open watertight door on February 22, 1996, were ineffective in preventing a recurrence of an open watertight door on July 15, 1996. This was considered a violation of 10 CFR 50, Appendix B, Criterion XVI (50-454/455-96006-01(DRP)).
- The licensee shutdown Unit 2 due to a steam generator tube leak. The licensee set an administrative limit for shutdown at 120 gallons per day (gpd). This limit was below the technical specification and abnormal operating procedure limit of 150 gpd. Additionally, the inspectors concluded that the operators and chemists performed well during the initial identification, continued trending, and final resolution to shutdown the unit (Section 01.3).

Maintenance

- Work controls for auxiliary feedwater system surveillances failed to prevent installation of the strip chart recorder on the B Auxiliary Feedwater (AF) train while the A train was inoperable for a routine surveillance. The installation resulted in both trains of Auxiliary Feedwater being inoperable (Section M1.1).

Engineering

- The licensee's search for additional foreign objects in the Unit 2 steam generators was good.

Plant Support

- The overall effectiveness of the licensee's emergency preparedness facilities, equipment, training, and organization was excellent (Sections P2.1, P3, and P5).
- Audits and surveillances of the emergency preparedness program, including the Peer Review, were effective in evaluating the program and identifying program problems (Section P7.1).

- Security self-assessment and monitoring the use of security badges for contractor personnel were considered strengths (Section S7).
- Unresolved items were noted pertaining to Medical Review Officer involvement in for cause fitness-for-duty testing (Section S8.1), and not ascertaining activities for licensee personnel not under a behavior observation program (Section S8.6).

Report Details

Summary of Plant Status

Unit 1 completed a refueling outage (B1R07) on July 3, 1996. The unit operated at or near full power following startup and throughout this inspection period with no significant problems.

Unit 2 remained at or near full power throughout the first part of the inspection period. Unit 2 chemistry results indicated a small steam generator tube leak in mid-July. The leak continued to increase slowly until August 7, when the leak rate calculations indicated steam generator tube leakage was greater than 120 gpd. A controlled shutdown was performed. After approximately one week of forced outage due to the steam generator tube leak, the licensee transitioned to a refueling outage, originally scheduled to start September 7, 1996. Unit 2 remained in the refueling outage at the end of the inspection period.

I. Operations

01 Conduct of Operations

01.1 General Comments (71707)

Using Inspection Procedure 71707, the inspectors conducted frequent inspections of plant operations. Routine operations were conducted in a safe, professional manner. Specifically, the operators performed well during the unplanned Unit 2 shutdown discussed in Section 01.3 below. One operations related event regarding control of watertight doors was also discussed in Section 01.2.

01.2 Auxiliary Building Floor Drain Sump Room Watertight Door Found Open

a. Inspection Scope

On July 15, 1996, the inspector identified that the Unit 2 Auxiliary Building Floor Drain Sump room door was open and unattended. The inspector reviewed a previous related NRC violation, licensee corrective actions to that related violation, and the station flooding analysis.

b. Observations and Findings

On July 15, 1996, the inspector identified that the Unit 2 Auxiliary Building Floor Drain Sump room door was open and unattended. The sump room door was a watertight door in the B train Essential Service Water (SX) pump room. Byron Administrative Procedure (BAP) 1100-3 "Fire Protection Systems, Fire Rated Assemblies, Ventilation Seals, and Flood Seal Impairments," required the door to be shut except during personnel passage or when the room was occupied.

On February 22, 1996, the inspectors identified the same door for Unit 1 open without the proper impairment controls. The licensee was issued a violation for failing to follow procedures in Inspection Report 96-03. The open, unattended watertight door was an example used for the violation (50-454/455-96003-01b(DRP)).

The licensee investigation of the February 22, 1996, event was inconclusive. The licensee did not identify anyone who remembered either leaving or seeing the door open. The door had a sign stating the door must remain closed at all times except during passage or when the room was occupied. Corrective actions for the February 22, 1996, event included: a briefing on the requirements for flood seals was provided to radiation protection personnel and station laborers; and a refresher session covering watertight seals was added to all continuing and initial training courses.

The inspector considered the corrective actions resulting from the February 22, 1996, event were ineffective in preventing a recurrence on July 15, 1996. The NRC identification of the open watertight door on July 15, 1996, was considered a violation of 10 CFR 50, Appendix B, Criterion XVI (50-454/455-96006-01(DRP)). Criterion XVI, Corrective Action, requires, in part, that the cause of a condition adverse to quality be determined and corrective action be taken to preclude repetition. At the end of the inspection period, the licensee was performing a formal root cause investigation to determine appropriate corrective actions.

The inspector determined that the safety consequence of each occurrence was minimal due to the small design flow rate into the floor drain sump room. The inspector reviewed the flooding analysis, which was completed after the door was installed, and verified the door was not required as a flood seal. The design pipe rupture in the floor drain sump room was smaller than the design pipe rupture in the SX pump room. However, the door was considered by the licensee to be a required flood seal for procedural consistency and additional safety margin.

c. Conclusions

The inspector concluded that the corrective actions resulting from the discovery of an open watertight door on February 22, 1996 were ineffective in preventing a recurrence on July 15, 1996. The NRC identification of a similar watertight door open on July 15, 1996, was considered a violation of 10 CFR 50, Appendix B, Criterion XVI (50-454/455-96006-01(DRP)).

01.3 Unit 2 Primary-to-Secondary Steam Generator Tube Leak

a. Inspection Scope (93702)

The inspectors reviewed the unexpected indication of a primary-to-secondary steam generator tube leak on Unit 2. The inspectors reviewed

the licensee's decision to shutdown the unit, and observed chemistry and operations staffs' planning and execution of the shutdown evolution.

b. Observations and Findings

On August 7, 1996, the licensee initiated a Unit 2 reactor shutdown at about 9:00 p.m. (CDT), when a primary-to-secondary tube leak in steam generator "A" exceeded an administrative limit of 120 gallons per day (gpd). The peak leakage measurement taken at the condenser steamjet air ejector, sampling for Xenon 133 activity, was approximately 143 gpd. The six-hour measured average leakage rate was slightly above 120 gpd. Technical Specification 3.4.6.2.c required the reactor to be shutdown if any one steam generator leakage exceeded 150 gpd. At approximately 11:30 a.m. (CDT) on August 8, Unit 2 was shutdown with all control rods inserted with the reactor trip breakers open.

The inspectors observed that the licensee performed an orderly shutdown at a slow rate of one megawatt per minute. The inspectors determined that the licensee took proper actions to brief the crew and shutdown the reactor at a slow rate to prevent undue degradation to the steam generator tubes from the power transient.

The licensee first identified the steam generator tube leakage when the chemistry department measured an activity increase in Xenon 133 on July 9, 1996. The measured leakage rate was approximately 5 gpd and steadily increased to about 80 gpd by August 5. The leakage rate rapidly increased to above 100 gpd over the next two days, which led to the forced outage. Unit 2 was in a coastdown mode going into a scheduled refueling outage on September 7, 1996. Due to the unknown cause for the steam generator leakage, the licensee scheduled the forced outage for approximately one week and made plans to start the refueling outage early on August 19, 1996.

c. Conclusion

The inspectors concluded that the licensee satisfactorily took precautionary measures to shutdown the unit. The inspectors were concerned with the steadily increasing leakage rate, but the licensee conservatively set an administrative limit for shutdown at 120 gpd. This limit was below the technical specification and abnormal operating procedure limit of 150 gpd. Additionally, the inspectors concluded that the operators and chemists performed well during the initial identification, continued trending, and final resolution to shutdown the unit.

08 Miscellaneous Operations Issues

- 08.1 (Closed) Violation 50-454/455-94025-01: Failure to obtain initial approval of overtime deviations prior to the occurrence on at least 29 separate occasions. The inspector verified the corrective actions identified in the violation response were completed. Additionally, the inspector reviewed overtime deviation documents for the first six months

of 1996. The inspector did not identify any overtime deviations without prior approval. The inspector concluded that the licensee's corrective actions had been appropriate. This item is closed.

- 08.2 (Closed) Violation 50-455/93012-01(DRP): No response violation. Issues on documentation deficiencies concerning administrative procedures (special plant procedures, limiting condition for operation action requirement procedures), were identified by the licensee and corrective actions were performed by the licensee. Improvements to formal procedural guidance, written communication control, and supervisory reviews were incorporated into licensee's administrative procedures. These improvements were incorporated at the time the violation was issued; therefore, no written response was required. Subsequently, in view of the licensee's initial response and lack of similar problems associated with documentation deficiencies. This item is closed.

II. Maintenance

M1 Conduct of Maintenance

M1.1 Two Trains of Auxiliary Feed Water Inoperable (Unit 1)

a. Inspection Scope (71707 & 61726)

The inspector observed portions of 1BOS 7.1.2.1.b-1, "Motor Driven Auxiliary Feedwater (AF) Pump Monthly Surveillance."

b. Observations and Findings

The licensee's monthly AF surveillance procedure required the AF pump to be isolated from the steam generators. The inspector verified the proper technical specification (TS) limiting condition for operation (LCO) action requirement was entered prior to starting the surveillance. The motor driven AF pump was part of the A AF train.

In addition to the monthly surveillance, the licensee planned to connect additional instrumentation to both trains of AF. The instrumentation was to support baseline data collection for evaluation of AF flow parameters. Specifically, strip chart recorders were planned to be connected to the AF pump suction pressure transmitter test connections on both A and B pumps.

While the A train was inoperable (due to the surveillance), an instrument mechanic connected a chart recorder to the B train suction transmitter. The instrument mechanic was using an authorized work package, approved by shift operators. When the strip chart recorder was connected, the annunciator, "low suction pressure trip" was received for the B AF pump. The low suction pressure trip would have tripped the B AF pump following an automatic actuation, which made the B train inoperable. The operators realized that both trains of AF were inoperable and entered the appropriate TS action statement (TS 3.7.1.2).

At the direction of the control room operators, the instrument mechanic immediately disconnected the chart recorder from the B train suction transmitter. The A train surveillance was stopped and the system returned to an operable status. Both trains of AF were inoperable for approximately 8 minutes.

Instrument mechanics (IMs) had discussed the planned connection of the strip chart recorders with the shift operators prior to beginning work. The operators understood that the IMs were going to route cables and stage the strip chart recorders. The IMs believed they had authorization to connect the strip chart recorders to the test connections.

c. Conclusions

The inspector concluded that work controls failed to prevent installation of the strip chart recorder on the B AF train while the A train was inoperable for a routine surveillance. This is an unresolved item pending further review of the licensee's work planning for these activities (50-454/455/96006-10). The inspector also concluded that the operators demonstrated good system knowledge for immediately recognizing that both trains of AF were inoperable.

M8 Miscellaneous Maintenance Issues

- M8.1 (Closed) LER 50-454/93-002: Unit 1 containment purge isolation system (VQ) valves failed to close as required during a surveillance test. During the performance of core alterations (fuel movements), the technical specification required the VQ valves to be tested 100 hours prior to fuel movement and every 7 days thereafter. During a subsequent performance of this surveillance, the licensee found that train A valves actuated, but the train B valves did not. The licensee identified that a jumper, which was installed to maintain the VQ automatic function in service while the solid state protection system (SSPS) was in test during Modes 5 and 6, was accidentally dislodged. The licensee determined that the jumper was dislodged during the continuity test switch wiring work in the SSPS cabinet (LER 93-001). The licensee determined that the approximate time that train B of the containment purge isolation train was inoperable with core alteration in progress was 22 hours. During this time train A was operable for purge isolation. The licensee immediately corrected the dislodged jumper and initiated corrective actions to prevent future occurrence. The licensee's procedure improvements to specify correct routing, new jumper end clips, and length of jumpers (too long which made it easier for them to become dislodged) were completed July 9, 1993. This event resulted in the failure of one train of VQ valves to close automatically. The licensee's corrective actions were appropriate. This licensee identified and corrected violation is being treated as a non-cited violation, consistent with Section VII.B.1 of the NRC Enforcement Policy (50-454/455-96006-02). This item is closed.

- M8.2 (Closed) LER 50-455/93-002: Unit 1 essential service water (SX) pump availability to Unit 2 surveillance not performed as required. With Unit 2 in mode 1 and Unit 1 in mode 6, the technical specification required that one of the Unit 1 SX pumps must be verified available to support Unit 2 operations once every 24 hours. On March 11, 1993, due to personnel error, the Unit 1 operator failed to note in the shift/daily operating surveillance the verification of the one SX pump designated for Unit 2 support as being available. The following shift identified the error and immediately performed the SX availability surveillance. The safety consequence of this error was minor since the designated SX pump for Unit 2 support was previously designated as protected from any work activities. The licensee initiated improvements in the shift/daily surveillance to clarify when the surveillance are required to be performed. In addition the licensee verified the effectiveness of the improvements on September 1, 1994, and determined that there were no similar occurrences. The licensee's corrective actions were appropriate. The failure to perform a surveillance was a violation; however, this licensee identified and corrected violation is being treated as a non-cited violation, consistent with Section VII.B.1 of the NRC Enforcement Policy (50-454/455-96006-03). This item is closed.
- M8.3 (Closed) LER 50-455/93-004: Inadvertent Unit 2 train B safety injection during surveillance testing in Mode 5 due to mispositioned switch. This event was cited as one of three examples in a violation for failure to follow procedures in inspection report 50-454/455-93012-02. The violation was subsequently closed in inspection report 50-454/455-95005. This item is closed.
- M8.4 (Closed) LER 50-455/93-006: Unit 2 source range nuclear instrument channel N32 surveillance was missed. With Unit 2 in Mode 6, the source range channel N32 surveillance was not performed as required. The surveillance was September 22, 1993, and it was overdue on September 23, 1993. The missed surveillance was identified on September 24 and was immediately performed. The licensee identified the cause was improper status input to the computer data entry system. A partially completed surveillance was performed on September 18 and was incorrectly updated as being complete. The safety consequence of this event was minor, since both source range instruments were subsequently found to be operable and no core alterations had been conducted after the surveillance critical time. However, the licensee failed to perform the surveillance within the critical time period. The duration of the missed surveillance was approximately 4 hours. The licensee implemented a new surveillance status verification coversheet to clearly indicate the status of any surveillance. The new coversheet required the surveillance coordinator to clarify why the surveillance was being given a complete/done status and assisted the surveillance clerk in determining if the correct update status had been given to the surveillance package. This improvement was completed January 14, 1994. The licensee's corrective actions were appropriate. This licensee

identified and corrected violation is being treated as a non-cited violation, consistent with Section VII.B.1 of the NRC Enforcement Policy (50-454/455-96006-04). This item is closed.

III. Engineering

E2 Engineering Support of Facilities and Equipment

E2.1 Unit 2 Steam Generator Inspection

a. Inspection Scope

The inspector reviewed the licensee's inspection plan for the Unit 2 steam generators tube leak indications.

b. Observations and Findings

The licensee identified that the leakage appeared to have been caused by foreign material inside the steam generator. The licensee discovered a long, thin triangular piece of material, approximately 1½ inches long and 1/8 inch thick. The material and origin of the object was unknown at the end of the inspection period.

The licensee's eddy current inspection of the Unit 2 steam generators included:

- 100 percent full length bobbin coil inspection in each steam generator.
- a random selection of 25 percent of the steam generator tubes for top of tubesheet rotating pancake coil (RPC) inspection.
- 25 percent of the row 1 and row 2 u-bend areas were inspected using a Plus Point probe.

After the foreign object location was identified, both bobbin coil and RPC inspections were performed on two rings of adjacent tubes to bound the indications.

Eddy current analysts were given briefings to heighten awareness during the remainder of the steam generator inspections. One additional item was identified and retrieved, a piece of wire approximately 6 inches long.

Additionally, the licensee conducted a foreign object search and retrieval program. The fiber-optic camera identified a few small pieces of flexitalic gasket material. The material was retrieved.

c. Conclusion

The inspector concluded the licensee's search for additional foreign objects was good.

E8 Miscellaneous Engineering Issues

- E8.1 (Closed) LER 50-455/93-001: Wiring error in solid state protection system (SSPS) test circuitry. On February 22, 1993, with Unit 1 in Mode 6, the licensee identified a wiring error on the continuity test switch for phase B containment isolation in the Unit 1 SSPS cabinet 1PA10J. The licensee identified that the wiring error was a manufacturing error. The vendor manual indicated the incorrect wiring also. The manufacturer relayed the correct wiring information to the licensee and the vendor manual was also updated. The licensee appropriately entered Technical Specification 4.0.3, 24 hour exemption clause for a missed surveillance, and adequately corrected the wiring errors in Unit 1 train A and B, and Unit 2 train A within the time limit. Unit 2 train B wiring was found to be correct. The safety consequences were minor. The wiring error only affected the test switch and did not affect the actual containment phase B isolation capabilities. However, the wiring error did result in previous missed surveillance to test the continuity of the containment isolation circuit. The licensee's corrective actions were appropriate. This licensee identified and corrected violation is being treated as a non-cited violation, consistent with Section VII.B.1 of the NRC Enforcement Policy. This item is closed.

IV. Plant Support

P1 Conduct of Emergency Preparedness (EP) Activities

P1.1 Loss of Offsite Power Emergency Plan Activation

a. Inspection Scope (82701)

The inspector reviewed emergency plan activations which had occurred since the last routine inspection (July 11, 1994).

b. Findings and Observations

An Unusual Event was declared at 8:22 a.m. on May 23, 1996 when the Unit 1 Station Auxiliary Transformers tripped causing a loss of offsite power. Unit 1 was in Mode 5 (cold shutdown), and Unit 2 was manually tripped due to loss of service water and station air compressors. The station activated the Technical Support Center, even though activation was not required for an Unusual Event. The Unusual Event was terminated at 2:30 p.m. the next day when offsite power sources were restored and determined to be stable.

The station reviewed the event in accordance with procedure BZP 510-1, "Review of Actual Emergency Events." Records reviewed indicated that the classification and notifications had been made properly and in a timely manner. The documentation package for the event was highly detailed, complete, and technically correct. The inspector noted that the procedure did not require the conduct of an event response critique or contacts with responders to solicit comments. The procedure also did

not require evaluation of Emergency Response Data System (ERDS) activation if the event was classified as an Alert or higher.

c. Conclusions

The inspector concluded the licensee had properly implemented the Generating Stations Emergency Plan during the May 23, 1995 Unusual Event. The licensee's review of actions taken during the event was detailed and technically correct.

P1.2 Emergency Preparedness Exercise (82301)

a. Inspection Scope

On July 24, 1996, the inspector observed portions of the licensee's 1996 announced, off-hours emergency preparedness exercise. The inspector observed the licensee's performance at the control room simulator, technical support center (TSC), and operational support center (OSC).

b. Observations and Findings

The inspector observed the operators in the control room simulator. Crew communications were clear and professional. The operators were effective in mitigating the exercise scenario.

The inspector observed the TSC during portions of the exercise. The licensee reported minimum staffing was achieved in approximately 35 minutes. The TSC was fully staffed in approximately 1 hour and 15 minutes. The inspector observed good briefings, effective communications with the control room simulator and timely off-site notifications.

The TSC identified that the corporate emergency operations facility (corporate EOF) declared a General Emergency prematurely based on calculations of off-site radiation levels. Field monitoring teams were reporting off-site radiation levels consistent with a Site Emergency declaration (and consistent with the exercise scenario). The TSC was working with the corporate EOF to resolve the declaration error when the scenario ended.

The inspector observed that the OSC was well supervised and coordinated. The OSC director provided clear briefings and updates. Teams dispatched from the OSC were briefed prior to leaving the OSC. The inspector also noted the priorities in the OSC were consistent with priorities in the TSC.

c. Conclusions

The inspector concluded that the licensee demonstrated that the on-site emergency plans were adequate and that the licensee was capable of implementing the plans. The inspector also concluded that the off-hours manning was successful.

P2 Status of EP Facilities, Equipment, and Resources

P2.1 Material Condition of EP Facilities

a. Inspection Scope (82701)

The inspectors toured the Technical Support Center (TSC), Control Room, Operational Support Center (OSC), and Emergency Operations Facility (EOF), and assessed their material condition. The two Environs Team monitoring vans were also inspected, as well as field monitoring kits utilized for field teams.

b. Findings and Observations

Each EP facility was well maintained and in an operational state of readiness. Equipment and supplies were well maintained. Current copies of the Emergency Plan, Emergency Plan Implementing Procedures and appropriate forms were present in each facility. Environs Team vehicles and kits were in excellent condition. Minor enhancements were noted in various facilities.

A revised status board was present in the Operations Support Center. This board was intended to display available personnel by discipline, and was a part of the ongoing "OSC benchmark" standardization of OSC operations.

Minimum Staffing sign-in status boards were effectively designed and positioned in the facilities. Equipment verified operable included phone lines (FTS 2000 and plant dedicated lines), UNIX computers (MESOREM for dose assessment, Significant Events Log), environs team vehicle gasoline generator, and radiation survey meters. All equipment inspected was operable.

Several inventory procedures included an excellent pre-inventory checklist, which indicated which items were to be exchanged or inspected during that calendar quarter. Documents reviewed indicated that emergency equipment inventories and maintenance were excellent, with timely corrective actions taken where deficiencies were identified.

c. Conclusions

Overall, the inspector concluded that the emergency response facilities were in excellent material condition with no problems or concerns identified.

P3 EP Procedures and Documentation

a. Inspection Scope (82701)

The inspector reviewed selected licensee emergency procedures and emergency plan implementing procedures (EPIPs).

b. Findings and observations

The inspector reviewed procedure BZP-600-2, "Initiating Staff Augmentation." This procedure provides guidance for implementing BZP-600-A1, the "prioritized Call Listing for Staff," which also serves as the "Emergency Call List".

Procedure BZP 500-6, "Emergency Preparedness Activities and Surveillances," contained an adequate overview of program commitments and activities.

Selected EPIPS in the 100, 200, 300, and 500 series were reviewed. The majority of the EPIPS had been revised in 1995 or 1996. No problems were identified.

c. Conclusions

No problems were identified with any of the reviewed procedures.

P5 **Staff Training and Qualification in EP**

a. Inspection Scope (82701)

The inspectors reviewed the licensee's EP training program. This included review of critiques, comparing training records against the roster of emergency response organization (ERO) personnel, and interviews with selected individuals.

b. Findings and Observations

Records indicated that drills and exercises were formally critiqued, training had been provided formal critiques, and significant critique items were appropriately selected for corrective action.

Printouts from the training tracking systems were compared with the "Emergency Call List," with no problems identified. The training record database of response personnel was reviewed and found to be comprehensive. The licensee's system was able to provide printouts of those requiring training in order to maintain their qualifications.

The licensee indicated during discussions with the inspector that attempts were made to train individuals in the same quarter as their last training. Review of EP training records and documentation revealed that excellent training was provided to emergency response personnel. The inspector's discussion with the EP trainer indicated that all EP lesson plans had been recently revised.

A sample of lesson plans was reviewed and discussed including: The NRC Incident Response module; Module S-3, "Emergency Teams"; Module S-10, "Communicator/recorder"; and Module S-5, "Assessment, Classifications & Notification."

Key emergency response personnel records reviewed indicated personnel were currently trained and qualified.

The inspectors interviewed key emergency response personnel which included a Station Director, Acting Station Director and a Control Room Communicator. The personnel interviewed were very knowledgeable of emergency procedures and their responsibilities.

The inspectors identified during the interviews that the emergency procedure BZP 320-9, "Emergency Response Data System Operation," and BZP-310-5, "Acting Station Director or Station Director" did not include the 10 CFR 50.72 requirement for activation of the Emergency Response Data System (ERDS) within one hour of an Alert classification or higher. (The procedure only indicated the requirement to activate at the Alert or higher).

Discussion indicated that a number of training improvements have been made or were in progress, including the tracking of corporate reading packages. There were combined Operating Simulator/TSC table top drills during one quarter of each year. Each training course had a separate course code, making tracking more effective.

c. Conclusions

The inspector concluded that the overall EP training was very good with challenging drills and training sessions. Critique documentation was very good and problem areas were highlighted for further training. The training records were excellent and interviewed individuals were very knowledgeable about their emergency responsibilities.

P6 EP Organization and Administration (82701)

The overall organization and management control of the EP function was unchanged from the last inspection with the EP staff reporting to the Station Manager through the Health Physics Supervisor and Technical Support Superintendent. An individual was assigned as EP Trainer, reporting to the training organization.

The EP Coordinator still retained responsibilities for Radiological Environmental Monitoring Program (REMP) and the Radiological Environmental Technical Specifications (RETS) program. The Assistant EP Coordinator position had been eliminated. Discussion indicated that responsibilities for REMP and RETS would be shifted to another individual in the near future, and the total resources applied to the EP program would remain the same as in prior reports.

P7 Quality Assurance in EP Activities

P7.1 Audits (82701)

a. Inspection Scope (82701)

The inspector reviewed the following Site Quality Verification audits of emergency preparedness; QAA 06-95-05, performed during April 1995, QAA 06-96-06, performed during April 1996, and the 1996 Peer Review performed during May 1996.

b. Findings and Observations

Audit QAA-95-05 was performed by four individuals. The audit concluded that the EP program was effectively implemented. The audit was complete and well detailed.

Audit QAA-96-06 was performed by four individuals. The audit verified implementation of the requirements of the Emergency Plan and implementing procedures. Two audit findings (level III) were associated with the audit. The audit was complete, insightful and very well detailed.

In addition to the audits, a number of Field Monitoring Reports had been performed during 1995 and 1996. These reviews largely confirmed acceptable performance, but identified several items, including software maintenance, procedure adequacy and procedural adherence.

The 1995 and 1996 audits of the EP program satisfied the scope requirements of 10 CFR 50.54(t). Discussion with the licensee also indicated that the EP staff fulfilled the requirement to make relevant audit results available to State and county officials.

The 1996 Peer Review identified several issues to station management and corrective actions were taken. Peer Reviews have shown merit at this and other stations.

c. Conclusion

The licensee's 1995 audit of EP activities was good and satisfied the requirements of 10 CFR 50.54(t). The Peer Review process was effective in identifying various program problems.

P8 Miscellaneous EP Issues

P.8.1 (Closed) Inspection Follow-up Item (454/94016-01(DRS)): Training on NRC and other federal agencies' incident response programs. A reading package providing details of the NRC response program was developed by the corporate emergency planning group and distributed to various personnel. The Site developed a training module "NRC Incident Response," which was undergoing review and revision at the time of the inspection. Records indicated that twenty-two individuals received this training during November, 1994. The

Byron and LaSalle training modules were reviewed and found acceptable with minor modifications. Discussion indicated that a standardized NRC incident response training module would be considered for ComEd sites. This item is closed.

P.8.2 (Open) Inspection Follow-up Item (454/455/9501i-06(DRS)): Review of the process for tracking and directing emergency inplant teams. The licensee has developed an "OSC benchmark" program for standardizing activities at each sites' OSC. Implementation of this program was underway but not completed. An additional status board had been developed to track available personnel in the OSC as a part of this program, but other aspects remain to be completed. This item will remain open.

S2 Status of Security Facilities and Equipment

a. Inspection Scope (81700)

The inspector reviewed the condition of security equipment and facilities.

b. Observation and Findings

Most security components required limited compensatory measures and had a very high inservice time. One exception to this observation was noted. One security component has required compensatory measures since mid January 1996 (exact component, nature of failure, and compensatory measures are considered safeguards information and exempt from public disclosure). During this inspection, the cause for the component failure had not been confirmed. Because of the extensive time that this component has required compensatory measures, return to service will be monitored during the next inspection. This issue was considered an inspection follow-up item (50-454/455/96006-05 (DRS)).

Some data trended and monitored on a monthly basis was of limited value because of system improvements. An example included monitoring security badges lost outside of the protected area. Recently implemented hand geometry technology reduced the significance of lost security badges since the badges were no longer required to be kept within the protected area.

Implementation of a new security computer system was scheduled to be initiated by the end of July 1996.

c. Conclusions

Security facilities were generally well maintained and security equipment functioned as designed. With one exception, security equipment attained a high inservice time.

S3 Security and Safeguards Procedures and Documentation

a. Inspection Scope (81700)

The inspector reviewed selected security procedures pertaining to the areas inspected and also reviewed appropriate logs, records and other documents pertaining to the activities inspected.

b. Observation and Findings

An inspection followup item was noted by the inspectors pertaining to the need to revise the security plan and procedures because of pending security related projects. For example, the revisions to the security plan and security department procedures will be required following the activation of the new security computer at the end of July 1996, and when redundant capabilities of the existing computer system are eliminated later in the year. The security plan changes must be forwarded to the NRC within two months after implementation of the changes as required by 10 CFR 50.54(P).

Some procedures such as BAP 900-18, "Reporting and Recording of Security Events," may require revision. Badges outside of the protected area no longer required logging or reporting since security badges can be removed from the protected area if hand geometry technology is used. Other procedures may also have been affected because of the hand geometry system use. Finally, the most recent revision to the security plan appeared unacceptable in some aspects and needed to be resubmitted. This issue was considered an inspection follow-up item (50-454/455/96006-06 (DRS)).

An unresolved item was noted pertaining to "ascertaining of activities" for licensee employees when a person was away from a behavior observation program for extended periods. Section B.3 of Regulatory Guide 5.66 "Access Authorization Program For Nuclear Power Plants" dated June 1991, (which the licensee had committed to for implementation of the access authorization program required by 10 CFR 73.56), requires a person's activities under certain circumstances to be "ascertained" or evaluated when they are absent from a behavior observation program for extended periods. The existing licensee program did this for contractor personnel who did not use their security badge for 30 or more days. However, no similar program existed for licensee personnel. The Regulatory Guide makes no distinction between contractor and licensee personnel for evaluation purposes when absent from a behavior observation program. The licensee corporate security staff position was that a licensee employee never leaves the umbrella of their behavior observation program even when absent because the licensee knew the reason for the absence. This issue applies to all six of the licensee's sites and will be forwarded to NRR for evaluation. Resolution of this unresolved item will be addressed by separate correspondence (50-454/455-96006-07 (DRS)).

c. Conclusions

The inspectors concluded that the procedures reviewed were of good quality and correctly described the tasks to be performed. One exception was identified by the inspector, this pertained to behavior observation for licensee employees. The inspectors also found that the security personnel interviewed on post were familiar with procedure requirements applicable to their responsibilities.

S4 **Security and Safeguards Staff Knowledge and Performance**

a. Inspection Scope (81700)

The inspector toured various security posts and observed work in progress. Interviews with security officers were conducted to determine if the officers were knowledgeable of post requirements.

b. Observation and Findings

The inspectors noted no performance deficiencies during visits to the security posts. Personnel interviewed and observed were aware of post responsibilities and procedures. No adverse trends for security force performance were noted. Only three performance related security deficiencies within the past seven months, identified by the licensee, have resulted in loggable security events.

Security performance trends monitored on a monthly basis, such as security plan deviations, compensatory measures, loggable security events, and security component inservice time have generally been very good and consistent.

c. Conclusions

No deficiencies were noted pertaining to staff knowledge and performance.

S7 **Quality Assurance in Security and Safeguards Activities**

a. Inspection Scope (81700)

The inspector reviewed the most recent Site Quality Verification (SQV) audit of the security program, the most recent corporate security audit of the security program (referred to as "A" team), the most recent audit performed by the contractor security company, and self assessment efforts conducted by the security department.

b. Observation and Findings

The licensee's self assessment efforts continued to be varied and proactive. Since the beginning of 1996, the contract security company had been audited by their corporate security office, SQV had completed an annual audit of the security program, corporate security had

completed an audit of the security program, and the contract security company had completed five security related surveillances of security practices. The audit and self assessment findings were being effectively tracked and monitored by the security staff. The audit and self assessment efforts were well documented. The self assessment efforts were noted as a program strength.

An aggressive program had been implemented pertaining to search functions. Over 100 drills and exercises pertaining to searches have been conducted within the past year. The drills were conducted by licensee and contract security personnel. Results of the drills were satisfactory. In spite of the aggressive evaluation program, search techniques was identified as a concern during the most recent SQV audit of the security program. SQV has assigned a high level of significance to their concern (Level III B) to assure corrective actions are reviewed by the Plant Manager. The security staff also requested that a root cause analysis be completed. Actions to address this concern appear aggressive.

c. Conclusions

The inspectors concluded that the security program self assessment efforts were a program strength. Multiple audits of the security program have been completed within the past year and surveillance results were well documented, tracked, and monitored. Also, the licensee implemented aggressive actions to address weaknesses identified through the self assessment effort.

S8 Miscellaneous Security and Safeguards Issues

- S8.1 (Closed) Unresolved Item 50-454/455/91004-01: This item pertained to weaknesses in the fitness-for-duty (FFD) program concerning the testing for drugs and alcohol. The unresolved item had three elements. The elements included (1) testing for alcohol only if a for-cause test for alcohol was suspected; (2) allowing individuals that warrant for-cause testing to be taken home and not tested if the Medical Review Officer (MRO) cannot be contacted; and (3) requiring the Medical Department to be contacted if a licensee employee was observed to be impaired or displayed aberrant behavior and have the MRO determine if FFD testing was required. An interview with the licensee's FFD Program Administrator showed that elements 1 and 2 above have been corrected in the licensee's FFD procedures. Element 3 continues to be the licensee's policy. Since two of the three elements have been corrected, this issue will be closed. A new unresolved item will be established to review again the issue of MRO concurrence before for-cause testing was conducted (50-454/455-96006-08 (DRS)). This item is closed.
- S8.2 (Open) Inspection Followup Item 50-454/455/95013-09: This item pertained to the security plan not accurately describing some capabilities for three security components. In most of the cases, the existing capabilities were improvements over former commitments in the security plan. The security plan had been revised to correctly describe

the capabilities for the security components. The plan revision had completed onsite review and at the end of the inspection period had been sent to corporate security headquarters for review and formal submittal to the NRC. This item will remain open pending receipt of the revision by the NRC.

- S8.3 (Closed) Inspection Followup Item 50-454/455/95013-10: This item pertained to the serviceability of the filters for gas masks and the availability of eye glass inserts for gas masks for personnel issued gas masks as part of their response equipment. New gas masks have been acquired and the new masks do not require eye glass inserts. Standard type eye glasses can be worn with the new masks. The shelf life of the gas mask filters was being monitored. This item is closed.
- S8.4 (Closed) Inspection Followup Item 50-454/455/95007-08: This item pertained to four procedure weaknesses. Two of the four needed changes were corrected and closed during the previous inspection. The remaining two items pertaining to submittal of fingerprint cards and certification of physical examinations have been corrected and was to be addressed by separate correspondence. This item is closed.
- S8.5 (Closed) Security Event Report (SER) No. 96-S02-00: This item was submitted on June 14, 1996, and pertained to required compensatory measures not being implemented during an adverse weather contingency. During review of this issue, the inspector noted that guidance documents pertaining to compensatory measures were very fragmented, in general. Guidance for compensatory measures existed in four different documents (security plan, BSP procedure 400.1, CNSG procedure 4 and the post order for the security shift supervisor). No single procedure contained the compensatory measures for all of the contingencies that could require such measures. The licensee satisfactorily implemented the corrective actions identified in the SER. This licensee identified and corrected violation is being treated as a non-cited violation, consistent with Section VII.B.1 of the NRC Enforcement Policy (50-454/455-96006-09 (DRS)). This item is closed.

V. Management Meetings

X1 Exit Meeting Summary

On August 20, 1996, the inspectors presented the inspection results to licensee management. 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

K. Graesser, Site Vice President
K. Kofron, Station Manager
D. Wozniak, Site Engineering Manager
T. Gierich, Operations Manager
P. Johnson, Technical Service Superintendent
E. Campbell, Maintenance Superintendent
M. Snow, Work Control Superintendent
D. Brindle, Regulatory Assurance Supervisor
T. Schuster, Site Quality Verification Director

INSPECTION PROCEDURES USED

IP 37551: Onsite Engineering
IP 62703: Maintenance Observations
IP 61726: Surveillance Observations
IP 71707: Plant Operations
IP 71750: Plant Support Activities
IP 81700: Physical Security Program for Power Reactors
IP 82301: Evaluation of Exercises for Power Reactors
IP 82701: Operational Status of the EP Program

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-454/455/96006-01	VIO	Inadequate corrective action concerning water tight doors.
50-454/455/96006-02	NCV	One train of containment purge isolation system inoperable during core alteration.
50-454/455/96006-03	NCV	Failed to perform an essential service water availability surveillance.
50-454/455/96006-04	NCV	Failed to perform a surveillance on one train of source range instrument.
50-454/455/96006-05	IFI	Security component required compensatory measures for several months.
50-454/455/96006-06	IFI	Need for security plan revision.
50-454/455/96006-07	URI	Ascertaining of activities for personnel not under a behavior observation program.
50-454/455/96006-08	URI	Medical services personnel involvement needed before fitness-for-duty for cause testing is completed.

50-454/455/96006-09	NCV	Missed security compensatory action during adverse weather.
50-454/455/96006-10	URI	Work controls for auxiliary feedwater surveillances.

Closed

50-454/93-002	LER	One train of containment purge isolation system inoperable during core alteration.
50-455/93-002	LER	Failed to perform an essential service water availability surveillance.
50-455/93-004	LER	Inadvertent Unit 2 train B safety injection during surveillance testing in Mode 5.
50-455/93-006	LER	Failed to perform a surveillance on one train of source range instrument.
50-454/96-S02-00	SER	Missed security compensatory action during adverse weather.
50-454/455/91004-01	URI	Fitness-For-Duty procedure weaknesses.
50-454/455/95007-08	IFI	Four weaknesses noted with security related procedures.
50-454/455/95013-10	IFI	Serviceability of gas mask filters and availability of eye glass inserts.
454/94016-01	IFI	Emergency preparedness training on NRC Incident response program.
50-454/455/96006-02	NCV	One train of containment purge isolation system inoperable during core alteration.
50-454/455/96006-03	NCV	Failed to perform an essential service water availability surveillance.
50-454/455/96006-04	NCV	Failed to perform a surveillance on one train of source range instrument.
50-454/455/96006-09	NCV	Missed security compensatory action during adverse weather.

Discussed

50-454/455/95013-09	IFI	Security plan not accurately describing some security component capabilities.
454/455/95011-06	IFI	Review of process for tracking/directing emergency inplant teams.

LIST OF ACRONYMS

AF	Auxiliary Feedwater
BAP	Byron Administrative Procedure
BCP	Byron Chemistry Procedure
BOA	Byron Abnormal Operating Procedure
BOP	Byron Operating Procedure
BOS	Byron Operating Surveillance
CC	Component Cooling
CFR	Code of Federal Regulations
EOF	Emergency Operations Facility
EP	Emergency Preparedness
EPIP	Emergency Plan Implementing Procedure
ERDS	Emergency Response Data System
ERO	Emergency Response Organization
ESF	Engineered Safeguard Feature
FFD	Fitness for Duty
GPD	Gallons per Day
IM	Instrument Mechanic
LCO	Limiting Condition for Operation
MRO	Medical Review Officer
NSO	Nuclear Station Operator
OSC	Operational Support Center
PIF	Problem Identification Form
PORV	Power Operated Relief Valve
PPM	Parts per million
RCS	Reactor Coolant System
RP	Radiation Protection
RP&C	Radiation Protection and Chemistry
SAC	Station Air Compressor
SAT	Station Auxiliary Transformer
SG	Steam Generator
SQV	Site Quality Verification
SRO	Senior Reactor Operator
SSPS	Solid State Protection System
SX	Essential Service Water
TS	Technical Specification
TSC	Technical Support Center
UFSAR	Updated Final Safety Analysis Report
VQ	Containment Purge Isolation System
WS	Service Water