U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-456/85045(DRP); 50-457/85044(DRP)

Docket Nos. 50-456; 50-457 Licenses No. CPPR-132; CPPR-133

Licensee: Commonwealth Edison Company
Post Office Box 767
Chicago, IL 60690

Facility Name: Braidwood Station, Units 1 and 2

Inspection At: Braidwood Site, Braidwood, Illinois

Inspection Conducted: September 3 through November 1, 1985

Inspector: P.R. Pelke for T. M. Tongue — Date: 11/13/85

P.R. Pelke for M. J. Farber — Date: 11/13/85

Approved By: W. S. Little, Director
Braidwood Project — Date: 11/13/85

Inspection Summary

Inspection on September 3, through November 1, 1985 (Report No. 50-456/85045(DRP); 50-457/85044(DRP))

Areas Inspected: Routine, unannounced safety inspection of activities with regard to licensee action on previous inspection findings, plant tours, fuel receipt preparations, technical specification reviews, operational preparedness, communications, administrative controls for Startup Deficiency Reports, steam generator hydrostatic testing, piping and instrument diagram verification, fire protection plug valves, and guard force picket activities. The inspection consisted of 212 inspector-hours onsite by two NRC inspectors including 36 inspector-hours onsite during off-shifts.

Results: Of the eleven areas inspected, no violations were identified in ten areas, one violation was identified in one area (inadequate corrective action - Paragraph 3).

Details

1. Persons Contacted

Commonwealth Edison Company (CECo)

Corporate Personnel

A. Miosi, Nuclear Licensing Administrator

Braidwood Personnel

*M. J. Wallace, Project Manager
*C. W. Schroeder, Project Licensing and Compliance Superintendent
*D. L. Shamblin, Project Construction Superintendent
J. Gudac, Station Superintendent
*E. E. Fitzpatrick, Assistant Manager, Quality Assurance
*L. M. Kline, Project Licensing and Compliance Supervisor
N. Tomis, POAD Supervising Engineer
H. Zimmerman, Project Startup Testing Supervisor
D. Paquette, Maintenance Assistant Superintendent
*D. O'Brien, Administrative and Support Services Assistant Superintendent
R. Legner, Senior Operating Engineer
G. Masters, Operating Engineer
F. Willaford, Security Administrator
M. Andrews, Station Chemist
*G. Nelson, Assistant Technical Staff Supervisor
T. Keith, Lead Health Physicist
*T. W. Simpkin, Technical Staff-Licensing
*T. E. Quaka, Site Quality Assurance Superintendent
*R. Kyrouac, Quality Assurance Supervisor
*C. Tomashek, Startup Superintendent

NRC Personnel

J. Stevens, Braidwood Licensing Project Manager
G. Plumlee, Licensing Reviewer

NRC Contractor

D. McHuron, E.G.&G. Senior Engineer

The inspectors also talked with and interviewed several other licensee employees, including members of the technical and engineering staffs, reactor and auxiliary operators, shift engineers and foremen, electrical, mechanical and instrument personnel, contract security personnel and construction personnel.

*Denotes those attending one or more exit interviews conducted on September 5, 12, 19, October 10, 17, 24, and 31, 1985 and informally at various times throughout the inspection period.

2. Licensee Action on Previous Inspection Findings

The inspectors reviewed licensee corrective actions on the following items and the results are as stated:

(Closed) Violation (456/85023-01(DRP); 457/85024-01(DRP)): Failure to keep trash and debris out of safety related cable trays and control of high strength bolting material (construction material). The licensee provided instructions to contractors for control of trash, debris and safety related material and this specific issue was closed in inspection report No. 456/85032(DRP); 457/85031(DRP). However, plant tours by the inspectors revealed that this is still a problem and corrective action has not been effective.

(Open) Violation (456/85008-10(a),(b), and (c)(DRS); 457/85008-10(a), (b), and (c)(DRS)): Inadequate protection of installed safety related plant equipment. Steps were taken to correct the specific items identified, however, the actions were inadequate in that a number of new and ongoing conditions remain uncorrected.

With regard to the adequacy of the corrective action on both of the foregoing items, refer to Paragraph 3 of this report.

3. Plant Tours

During this inspection period, the inspectors conducted tours of the facility to make independent assessment of equipment, plant conditions, security, fire hazards and fire protection, maintenance, communications, work authorizations, and system controls during and after flushing, testing, and maintenance.

The inspectors reviewed applicable logs, procedures, work packages, and interviewed personnel involved in ongoing activities as part of the inspection.

During plant tours the inspectors identified areas where equipment protection was inadequate. Electrical panels in the auxiliary electrical equipment room and the main control board in the control room were left uncovered and/or open while masonry work was being conducted in the immediate vicinity. This resulted in fine masonry dust settling out on the control panels and internal components as well as leaving them vulnerable to further intrusion of other contaminants such as moisture, spray, or aerosols. Although there may not be an immediate problem with the equipment, the intrusion of foreign matter can cause unpredictable equipment failures in the future. The inspectors identified an open electrical junction box for temperature element leads on centrifugal charging pump 1CV01PA which contained an accumulation of oil such that the cable insulation was submerged in the oil. Additionally, the oil accumulation constitutes a potential fire hazard. The inspectors also identified a number of flexible electrical conduits which were damaged such that the cable supported the conduit and the cable insulation was exposed to cuts and gashes from the sharp edges of the conduits. The open junction box and the damaged flexible conduits were presented to

licensee management representatives during an exit meeting on September 19, 1985. As of October 28, 1985, no evidence was available to show that action had been taken to correct the conditions and that any evaluation had been performed to determine the reason for the accumulation of oil in the temperature element junction box.

The inspectors noted that in the past year there have been at least two previous violations for inadequate housekeeping and equipment protection.

The lack of effective overall corrective action to protect safety related equipment in response to NRC violations and failure to respond in a timely manner to inspector findings is considered a violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action" (456/85045-01(DRP); 457/85044-01(DRP)).

On October 29, 1985, subsequent to the inspector informing the licensee of the issuance of the violation for inadequate corrective action on housekeeping and equipment protection, the licensee issued an action plan. The plan delineates specific steps and responsible individuals for cleaning electrical panels and equipment in the Unit 1 and 2 control rooms auxiliary electrical rooms, and computer rooms on elevation 451'. The plan is specific to those areas and if effective, should prevent further intrusion of construction dust, dirt and debris into those control and electrical components. The action plan does not address other areas of the plant, e.g., safety related equipment areas of the turbine, auxiliary, and containment buildings, and is specific to electrical equipment. It does not address other systems such as mechanical ventilation, diesel generator, etc.

The limited scope was discussed with licensee management personnel at the exit meeting on October 31, 1985, and they stated that this was the beginning to an overall program in preparation for shifting the plant to a test/operational status. This will continue to be monitored as part of the routine inspection.

One violation was identified.

4. New Fuel Receipt Preparations

The inspectors reviewed the proposed Special Nuclear Materials License (No. SNM-1938) in preparation for receipt and storage of new fuel, post accident monitoring detectors, and a sealed plutonium calibration source. The inspectors also monitored the status of preparation of the spent fuel pool, new fuel storage area, and reviewed the status of required preoperational testing for fuel handling systems, personnel and training requirements, security preparations, required fire protection systems, and health physics programs. Subsequent to these reviews the license (SNM-1938) was issued on October 8, 1985. The inspectors will continue to monitor licensee preparations during forthcoming inspection periods.

No violations or deviations were identified.

5. Technical Specification Review

During the inspection period, the inspectors conducted a review of the draft Technical Specifications, dated September 16, 1985. The review was

for technical content, clarity, enforceability, typographical errors, and any questions where interpretation was in question.

On October 29 and 30, 1985, the inspectors met with members of the NRR Headquarters staff, an NRC contractor, and with licensee representatives to discuss the results of their individual review findings. The results of the meeting will be considered for resolution prior to the final proposed Technical Specification proof and review.

No violations or deviations were identified.

6. Operational Preparedness

Through interviews with personnel and observation of activities, the inspector identified the following concerns during the inspection:

a. An apparent shortage of operations personnel when considering the station is entering an intensive startup and testing program along with a large portion of personnel on training assignment for licensing.

b. The need for station maintenance personnel to get involved in as much activity as possible for a better understanding of the plant equipment prior to turnover for operation.

c. An exceptional number of nonessential design changes and modifications of systems during and after construction and testing.

   This can create unnecessary delays as well as making the station vulnerable to unexpected equipment failure events later in plant life, as evidenced by some of the recent occurrences at the LaSalle and Byron stations.

These issues were discussed with project management personnel who were knowledgeable on each of the items and could justify the condition or show that corrective actions were being implemented. These concerns will continue to be monitored routinely in future inspections.

No violations or deviations were identified.

7. Communications

During the inspection period, the senior resident inspector (SRI) attended a number of morning meetings in the control room to acquire a knowledge of the daily ongoing activities. It became evident that the CECo Operational Analysis Department (OAD) was not represented, even though there were about 20 OAD crews conducting testing on site. In addition, the inspector noted that occasionally, a start-up engineer from the start-up group would miss the meeting. The purpose of these meetings is for planning daily activities and the very important function of keeping all appropriate plant operations personnel apprised of activities in the plant that are related to control room indications, alarms or controls. Since the station is in a transition process from construction to a testing/operational mode, the SRI suggested that OAD and all start-up engineers be represented at the meeting. The

licensee acknowledged this and has provided representation as suggested. Further evidence of communication breakdown was identified when two small fires of suspicious origin occurred within a two week period. The construction Fire Marshall was informed and assessed the incidents, however, the station Fire Marshall or his assistant was unaware of the events. The licensee has taken steps to assure better communication between these individuals. The inspector expressed concern about adequate communications between the start-up test group and the station personnel throughout the start-up program to assure an adequate understanding of the equipment performance history to assure efficient operation.

Communications will continue to be routinely monitored.

No violations or deviations were identified.

8. Administrative Controls on Startup Deficiency Reports (SDR)

In response to concerns raised by Region III Test Program Section inspectors and as a result of observations by the inspector during a review of Startup Deficiency Reports, the inspector commenced an evaluation of the administrative controls for Startup Deficiency Reports. This document identifies broken, incomplete or improper installations, documentation, or testing items. These deficiencies have the potential to be nonconforming items and the Startup Deficiency Report may be the only record of a nonconformance until a Nonconformance Report (NCR) is generated. As such, SDRs written on safety related items are quality records.

The following documents were reviewed:

- Q.R. No. 15.0, Rev. 8, "Nonconforming Materials, Parts, or Components and Operations"
- Q.P. No. 15-1, Rev. 7, "Reporting Quality Nonconformances During Construction and Test"
- Braidwood Project Startup Manual, Rev. 13, Section 4.1.4, "Deficiencies"
- Braidwood Project Startup Manual, Rev. 13, Section 4.6.3.9, "Test Performance"

Following the review of these documents the inspector identified the following concerns:

a. The Braidwood Project Startup Manual, Section 4.1.4 provides the procedural requirements for control of the Startup Deficiency Report within the confines of the Startup organization. It does not provide instructions for the control of this document once it has been transferred to other departments. The inspector was unable to identify procedures in other site departments, Quality Assurance excepted, which contained instructions for the control of SDRs.

Evaluation of the requirement for organizations processing SDRs to have procedures which control them is an open item (456/85045-02(DRP); 457/85044-02(DRP)) pending further discussions with the licensee staff.

b. Review of the procedures controlling the deficiency reporting process revealed that there is no requirement to identify on the SDR documents such as work requests, NCRs, letters, and evaluations used in the resolution of the deficiency. Without the identification of these corrective action documents, the traceability of the corrective action is indeterminate. The ability to audit SDRs and trace corrective action from issue to closure is an open item (456/85045-03(DRP); 457/85044-03(DRP)) pending an audit of Startup Deficiency Reports by the inspector.

c. While attempting to identify procedures for control of SDRs the inspector was unable to determine whether or not provisions in existing Project Construction Department procedures would ensure that SDRs received a review to identify nonconforming items. Without these provisions it is not clear that Startup Deficiency Reports have been properly reviewed for nonconformance and that Nonconformance Reports have been written for all nonconforming items which were identified on SDRs. Review of Startup Deficiency Reports for nonconformance is an open item (456/85045-04(DRP); 457/85044-04(DRP)) pending a review of SDRs by the inspector to determine if there has been a consistent failure to report nonconforming items which are identified on Startup Deficiency Reports.

d. While examining the project procedure index to identify PM or PCD procedures related to SDRs the inspector noted that Procedure PM-05 "Nonconformance Reporting" was not issued. Since this procedure would be expected to define the projects administration controls for the issuing, handling, and tracking, of a quality record, the inspector is concerned that NCRs are not adequately controlled. Evaluation of the circumstances involved in the failure to issue this procedure is an open item (456/85045-05(DRP); 457/85044-05(DRP)).

No violations or deviations were identified.

9. Steam Generator Hydrostatic Testing

The licensee is currently scheduled to conduct a Reactor Coolant System primary hydrostatic test. To gain familiarity with the licensee's methods for conducting major hydrostatic tests, the inspector conducted a brief review of the construction procedure used to conduct the Unit 1 steam generator hydrostatic testing and witnessed portions of the test. The inspector had the following comments regarding the procedure and the evolution:

a. The procedure was very loosely constructed and was more of a set of broad general guidelines for conducting the evolution. Valve lineups did not appear to be well-structured or formal.

b. Secondary systems such as Condensate and Feed were used in support of the test. Personnel conducting the test used no procedures in the operation of these systems relying instead on their knowledge of the system to lineup valves and run the pumps.

c. Very little instrumentation was available to the operators in the control room to enable them to monitor the status of the plant. They were forced to rely on radio and face-to-face reports from test personnel to determine conditions in the plant. During the filling of the steam generators the only instrumentation which the inspector could identify as functioning were Condensate Booster Pump Amps and a Condenser Hotwell Level computer point. Significant steam generator parameters such as level, pressure, and temperature were not available to operators nor was the valve position indication for the Feedwater Regulating Bypass Valves which were used to control flow to the steam generator.

The inspector met with the Startup Superintendent to discuss these comments. It was noted by both the inspector and the Startup Superintendent that this was a construction test on a secondary system and it was not subject to the same requirements as a preoperational test on a safety-related primary system. However, the inspector pointed out that the primary hydrostatic test is also a construction test but that a similar test procedure and test performance would not be considered acceptable. The inspector stated further that the test procedure would be closely reviewed and witnessed.

No violations or deviations were identified.

10. Allegation Review

In response to an allegation concerning the accuracy of Piping and Instrument Diagrams (P&ID) the inspector has commenced walkdowns of P&IDs for selected safety systems and has interviewed members of the licensee's operational staff to evaluate the effectiveness of the P&ID verification and correction process. A walkdown of M-37, Auxiliary Feedwater has been completed and some minor deficiencies were noted. These were turned over to the licensee staff for resolution. A walkdown of the Diesel Fuel Oil system P&ID was started but will not be completed until the next reporting period. Further discussions with the operations staff regarding the P&ID verification and correction process will be required to determine the adequacy of the licensee's program.

Upon completion of the inspector's review of all issues involved in the allegation a report will be issued which will detail all the issues and address the resolution of each one.

No violations or deviations were identified.

11. Fire Protection Isolation Valves

An issue which emerged from both the fuel receipt preparation inspections and the allegation discussed in Paragraph 10 was the acceptability of the ITT Grinnell plug valves used as header and standpipe isolation valves in the fire protection system in the containment. In discussions with regional fire protection personnel a concern was raised as to whether or not these valves were approved for use in fire protection systems by the Underwriters Laboratory (UL) as required by the National Fire Protection Association (NFPA) Code, Section 14. The inspector met with the Project Construction Department (PCD) engineer responsible for fire protection and during the meeting was shown a letter dated May 17, 1985, from M&M Protection Consultants to Commonwealth Edison, which identified that the ITT Grinnell valves were not UL listed. The letter stated that the valves were seismically qualified but that a UL listing is not available for seismic class valves. The recommended resolution was that since UL listing is not available for seismic class, the valves are acceptable. Further discussions with regional fire protection specialists questioned this conclusion. Acceptability of the ITT Grinnell plug valves for use in fire protection applications is an open item (456/85045-06(DRP); 457/85044-06(DRP)) pending review of the matter by Region III fire protection specialists.

No violations or deviations were identified.

12. Guard Force Pickets

On November 1, 1985, the licensee implemented the services of Burns Security, replacing Guards Mark. On that date, the terminated guards established informational pickets at the north and south gates of the plant. Access to the plant was delayed by up to thirty minutes due to traffic congestion, however, the pickets dispersed by mid-morning. A number of contractor trades personnel honored the picket, however, licensee personnel appeared to be unaffected. There was some news media interest through an announcement over a local radio station.

The inspector monitored the activities and relayed information to Region III as appropriate.

No violations or deviations were identified.

13. Meetings, Training, and other Activities

On October 21 and 22, 1985, Mr. Yoshitaka Arakawa of the Japanese Ministry of Internal Trade and Industry was on site for an information gathering session as part of his three month tour of the United States. Mr. Arakawa's agency is the Japanese equivalent of the NRC and he expressed interests in a number of areas, such as the NRC Resident Inspector Program, Technical Specifications, emergency diesel generators, certification of construction work in accordance with construction codes, etc. Mr. Arakawa provided enlightening discussion when comparing the two nations and expressed gratitude for the time and information provided by the licensee personnel and the inspectors involved.

14. Open Items

Open items are matters which have been discussed with the licensee, which will be reviewed by the inspector and which involve some action on the part of the NRC or licensee or both. Open items disclosed during the inspection are discussed in Paragraphs 8 and 11.

15. Exit Interview

The inspectors met with licensee and contractor representatives denoted in Paragraph 1 during and at the conclusion of the inspection on October 31, 1985. The inspectors summarized the scope and results of the inspection and discussed the likely content of this inspection report. The licensee acknowledged the information and did not indicate that any of the information disclosed during the inspection could be considered proprietary in nature.