

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-456/85053(DRP); 50-457/85051(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: November 2 through November 30, 1985

Inspectors: *P.R. Pelke for*
T. M. Tongue

12/11/85
Date

M. J. Farber
M. J. Farber

12/13/85
Date

P.R. Pelke for
W. J. Kropp

12/11/85
Date

C. B. Ramsey
C. B. Ramsey

12/13/85
Date

Approved By: *W. S. Little*, Director
Braidwood Project

12/16/85
Date

Inspection on November 2 through November 30, 1985 (Reports
No. 50-456/85053(DRP); 50-457/85051(DRP))

Areas Inspected: Routine, unannounced safety inspection of activities with regard to licensee action on previous inspection findings, operational staffing, fuel receipt preparations, plant tours and independent assessments, schedule changes, preoperational testing, auxiliary feedwater system, safety injection system, diesel driven fire pump surveillance requirements, fire protection, meetings, training and other activities. The inspection consisted of 193 inspector-hours onsite by 4 NRC inspectors including 42 inspector-hours onsite during off-shifts.

Results: No violations or deviations were identified.

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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
*G. E. Groth, Assistant Construction Superintendent
M. E. Lohmann, Assistant Construction Superintendent
E. E. Fitzpatrick, Station Manager
*L. M. Kline, Project Licensing and Compliance Supervisor
*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
R. Ungren, Operating Engineer
F. Willaford, Security Administrator
M. Andrews, Station Chemist
*G. Nelson, Assistant Technical Staff Supervisor
F. Krowzack, Radiation-Chemistry Supervisor
T. Keith, Lead Health Physicist
T. W. Simpkin, Technical Staff-Licensing
R. Mertogul, Station Nuclear Engineer
*T. E. Quaka, Site Quality Assurance Superintendent
R. Kyrouac, Quality Assurance Supervisor
*T. Meyer, Station Fire Marshall

The inspectors also talked with and interviewed several other licensee employees, including members of the technical and engineering staffs, startup engineers, 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 November 13, 14, 21, and 27, 1985 and informally at various times throughout the inspection period.

2. Licensee Action on Previous Inspection Findings

The inspector reviewed the licensee actions on the following item(s) and the results are as stated:

(Open) Unresolved Items (456/85004-01(DRP); 457/85004-01(DRP)): Inspection of Containment Tendons to Determine Presence of Water and Cause of Grease Leakage. The licensee employed the services of Sargent & Lundy (S&L) to choose representative samples of 50 tendons in addition to six previously inspected, to be inspected in the Unit 1 and 2 containment buildings. The inspections are being conducted by a contractor, G. K. Newberg Co., to determine the presence of water in the tendons, make a determination of its source, and determine the cause of grease leakage. As of November 30, 1985, the licensee had identified the presence of water in sufficient number to where all vertical tendons would be examined. At the close of the inspection period, ten tendons out of 80 sampled were found with various quantities of water present. This item will remain open pending the results of the remaining examinations, the determination of the source of the water and the source of the grease leakage.

(Open) Unresolved Item (456/84041-01(DRS)): Clarification of ANSI 18.7 controls for preoperational testing. The inspector met with representatives of Project Startup, Site Quality Assurance, Station Quality Assurance, and Licensing and Compliance to review the licensee's progress in resolving this issue. The inspector identified the scope of activities called out by ANSI 18.7 and requested that the Startup Group identify those in which they are involved and to specify for each activity whether it is controlled by a quality assurance program conforming to ANSI 18.7 or ANSI N45.2. The inspector requested that the groups review their interface and resolve what appears to be misunderstanding among them regarding responsibility for oversight. This issue will be the subject of further discussions during future inspections.

(Closed) Open Items (456/85045-06(DRP); 457/85044-06(DRP)): Acceptability of ITT Grinnel plug valves. Regional fire protection specialists contacted Underwriter's Laboratory (UL) to discuss the licensee's position on seismic qualification/UL listing of these valves. UL confirmed that this listing is not commercially available for seismic class materials. This item is closed based on the information supplied by UL. A more detailed discussion is found in Paragraph 10.d.

No violations or deviations were identified.

3. Operational Staffing

The inspector conducted a preliminary review of the operational staff positions. The proposed draft Technical Specifications of July 17, 1985, as submitted by CECO, were compared to the FSAR and ANSI 18.1 for consistency. In addition, a number of personnel were interviewed and their

credentials were reviewed against the criteria of their assignments. This review will be completed at a later date (closer to the issuance of the operating license) to assure all vacancies are filled with properly certified personnel.

No violations or deviations were identified.

4. New Fuel Receipt Preparations

The inspectors continued to monitor the licensee's preparation for receipt and storage of fuel. The inspector reviewed the status of preoperational testing of the fuel handling systems, personnel training requirements, security preparations, fire protection requirements, and health physics preparations. The inspector observed testing of the fuel handling equipment, drag or friction testing of the spent fuel pool storage racks, and cleaning of the storage facilities.

The inspectors also reviewed all licensee identified deficiencies found during preoperational testing of the fuel handling and storage equipment. The inspector reviewed the licensee's resolutions and verified them to be acceptable and timely with respect to the need for the specific equipment.

The inspectors attended the licensee's training on fuel receipt and storage, and Health Physics (HP) on the receipt of fuel. In the HP portions, the licensee's preparation appeared weak and was confirmed by Station Quality Assurance personnel. The SRI attended a subsequent training session for HP radiation-chemistry personnel and it appeared that the earlier questions raised were resolved. The inspectors will continue to observe the HP activities as part of the normal inspection of this area. The SRI also participated in a licensee walkdown and discussion of all of the fuel handling, receipt and storage facilities on November 29, 1985. The group consisted of upper management personnel from the station, construction, preoperational, licensing departments and numerous other related personnel. The walkdown was an effort to raise and resolve any questions or concerns prior to the final walkdown before the receipt of fuel. Licensee personnel were very cooperative and all questions and comments appeared to be dispositioned in an adequate manner. The inspectors will continue to monitor these activities during the next inspections.

No violations or deviations were identified.

5. Plant Tours and Independent Assessments

The inspector conducted routine plant tours during the inspection period to make independent assessment of equipment conditions, plant conditions, security, fire protection, general personnel safety, and adherence to applicable regulatory requirements. During the tours, the inspector reviewed various logs, interviewed personnel and observed various ongoing activities. The inspector also monitored communications and housekeeping and found them to be as discussed in the previous inspection report (456/85045(DRP); 457/85044(DRP)). However, housekeeping and plant

appearance did show a marked improvement in those areas that were being readied for turnover, such as the spent fuel pool, new fuel storage and handling areas, and portions of the auxiliary electrical equipment spaces. Those areas will continue to be monitored as part of the ongoing inspection program.

No violations or deviations were identified.

6. Preoperational Testing

During the inspection period, the inspector observed portions of preoperational tests. The observation included verification that properly approved procedures were available and being followed, that data was properly recorded and within the allowable band specified in the procedure, that out-of-service tags were properly applied as necessary, procedure entries and exits were properly executed, instruments were properly calibrated, deficiencies identified were properly resolved and/or recorded for resolution, and that applicable regulatory requirements were met.

The inspector also reviewed applicable portions of the FSAR and draft Technical Specifications for comparison.

During the inspection, the inspector observed portions of the following tests:

- BwTP FH-11 Fuel Handling System
- BwTP FH-12 Spent Fuel Pool Bridge Crane
- BwTP FH-13 Spent Fuel Storage Racks, Failed Fuel Racks, and New Fuel Vault
- BwTP MS-10 Main Steam Isolation Valves

No violations or deviations were identified.

7. Auxiliary Feedwater System (AFW)

The AFW system was inspected to verify compliance with applicable codes, standards, FSAR requirements and drawings. The procedures and drawings utilized for this review were:

Procedures

- BwOP AF-1, Revision 0, "Fill and Vent of Auxiliary Feedwater System."
- BwOP AF-2, Revision 0, "Alignment for Standby Operation of Auxiliary Feedwater System."
- BwOP AF-3, Revision 0, "Securing the Auxiliary Feedwater System After Initiation."

- BwOP AF-4, Revision 0, "Draining the Auxiliary Feedwater System."
- BwOP AF-5, Revision 0, "Placing the Diesel Driven Auxiliary Feedwater Pump Battery Charger in Operation."
- BwOP AF-6, Revision 0, "Removing Diesel Driven Auxiliary Feedwater Pump Battery Charger from Operation."
- BwOP AF-E1, Revision 0, "Prestart Electrical Lineup."
- BwOP AF-M1, Revision 0, "Prestart Mechanical Lineup."
- BwCA-0.0, Revision 1, "Loss of AC Power - Unit 1."

Drawings

- M-37, Revision AG, "Diagram of Auxiliary Feedwater."
- 20E-1-52M037-01, Revision H, "Block Interconnection Diagrams Auxiliary Feed System AF."
- 20E-1-52M037-02, Revision H, "Block Interconnection Diagrams Auxiliary Feed System AF."
- 20E-1-52M03-03, Revision H, "Block Interconnection Diagrams Auxiliary Feed System AF."
- 20E-1-52M03-04, Revision J, "Block Interconnection Diagrams Auxiliary Feed System AF."
- 20E-1-4030 AF01, Revision R, "Schematic Diagram Auxiliary Feedwater Pump 1A."
- 20E-1-4030 AF02, Revision R, "Schematic Diagram Auxiliary Feedwater Pump 1B (Diesel Driven)."
- 20E-1-4030 AF04, Revision J, "Schematic Diagram Auxiliary Feedwater Pumps 1A and 1B Essential Service Water Suction Valves 1AF006A and 1AF006B."
- 20E-1-4030 AF12, Revision M, "Schematic Diagram Auxiliary Feedwater Pump 1B (Diesel Driven) Engine Startup Panel."
- M-4037-1AF02, Revision F, "Control Logic Diagram Auxiliary Feedwater Pump Suction Valves."

The inspector reviewed the appropriate drawings and procedures to verify that the requirements for the AFW system identified in FSAR Sections 7.3 and 10.4 have been addressed. The inspector also inspected the Main Control Board (MCB) and the Remote Shutdown Panel (RSP) to verify that the

controls, indications and alarms were in accordance with the FSAR requirements. As a result of this inspection several items were identified which require either action by the licensee or further evaluation by the inspector. These items are:

- a. The FSAR on page 10.4.19 requires a white monitor light on the MCB to alert the operator that the Essential Service Water (ESW) suction valves are not fully open when the ESW system is required to supply water for the AFW system. This light could not be located on the MCB. Discussions with the licensee's technical staff revealed that this light will not be installed and a revision to the FSAR will be processed to remove the requirement for this light. This matter is considered an open item pending a resolution of this FSAR requirement (456/85053-01(DRP)).
- b. Procedure BwOP AF-4, "Draining the AFW System" requires unlocking and closing valve SX205 (Recirculation Return to SX for the AFW pumps). This procedure does not address reopening and locking valve SX205 after draining the AFW system. A review of procedures BwOP AF-1, "Fill and Vent of Auxiliary Feedwater System"; BwOP AF-2, "Alignment for Standby Operation of Auxiliary Feedwater System"; and BwOP M-1, "Prestart Mechanical Lineup" revealed that valve SX205 is not identified to be verified in a locked open position. The omission of procedural step to verify that valve SX205 is reopened and locked after being closed for draining the AFW system could result in this valve being in an abnormal position. This is considered an open item pending as the establishment of appropriate controls to ensure valve SX205 is in its required position (456/85053-02(DRP)).
- c. The draft Technical Specifications in Section 4.7.1.2, which identify surveillance requirements for the AFW system do not address the batteries utilized in the starting of the diesel driven AFW pump 1AF01PB. At this time, the lack of surveillance requirements for the diesel AFW pump batteries in the draft Technical Specifications is considered an open item (456/85053-03(DRP)).
- d. The diesel AFW pump Engine Startup Panel, 1AF01J, has a switch for selecting which one of the two batteries is utilized for starting the diesel AFW pump. The procedures reviewed for lining up the AFW system for standby operation and for emergency operation do not address this battery selector switch. The licensee has been requested to evaluate the need for including this switch in the appropriate station procedures. This matter is considered an open item pending a review of the licensee's evaluation (456/85053-04(DRP)).

The inspector verified that a portion of the motor driven AFW pump system was in compliance with the Piping and Instrumentation Diagram (P&ID), M-37. This was accomplished by a walkdown of the portion of the system verified for compliance. The portion of the AFW system inspected included the piping, instrumentation, valves and other associated components between valve 1AF002A and valves 1AF005A(B)(C)(D). The attributes inspected included verifying that the workmanship of the welding was acceptable, the installed valves were identified by nameplate as ASME Section III, Class 3, and proper clearances were maintained between components.

8. Diesel Driven Fire Pump Surveillance Requirements

While evaluating the need for surveillance requirements for the diesel AFW pump, the inspector reviewed the draft Technical Specifications for the surveillance requirements for the diesel driven fire pump. The draft Technical Specification, Section 4.7.10.1, identifies that a surveillance on the diesel fire pump is required every seven (7) days. One requirement for determining that the battery bank is operable, is for the battery bank to have a voltage of 24 volts or greater. A review of surveillance procedure BwOS DC-W2, Revision 0, "24 Volt Battery Weekly Surveillance," revealed that the voltage of the battery bank is obtained with the respective battery charger in operation. This method of performing this surveillance would result in not obtaining the battery bank voltage but rather the output voltage of the battery charger. It was requested that the licensee evaluate the method of obtaining the diesel fire pump battery bank voltage for determining its operability status as required by the draft Technical Specification. Pending a review of this evaluation, this matter is considered an open item (456/85053-05(DRP)).

9. Safety Injection System (SI)

The SI system was inspected to verify agreement between drawings, procedures and the as-built plant. The procedures and drawings used during the review were:

Drawings

- M-61, Sheet 1A, Revision AJ, "Diagram of Safety Injection"
- M-61, Sheet 1B, Revision AJ, "Diagram of Safety Injection"
- M-61, Sheet 2, Revision Z, "Diagram of Safety Injection"
- M-61, Sheet 3, Revision AA, "Diagram of Safety Injection"
- M-61, Sheet 4, Revision AB, "Diagram of Safety Injection"
- M-61, Sheet 5, Revision N, "Diagram of Safety Injection"
- M-61, Sheet 6, Revision AB, "Diagram of Safety Injection"

Procedures

- BwSI-1, Revision 0, "Filling and Venting the Safety Injection System"
- BwSI-6, Revision 0, "Fill and Vent of SI Accumulators"
- BwSI-8, Revision 0, "Lowering Accumulator Level"
- BwSI-10, Revision 0, "Lowering Accumulator Nitrogen Pressure"
- BwSI-M1, Revision 0, "Prestart Mechanical Lineup"

During a walkdown of the safety injection system the inspector identified the following discrepancies between the drawings and the as-built plant:

- a. SI pump casing vent valves 1SI040A and 1SI040B are not on the drawings.
- b. Temperature indicator TI-5I043 is located downstream of pump 1SI01PB discharge valve vice upstream as shown on drawing.
- c. Capped suction vent (3/4 inch line) is not installed on pump 1SI01PA as shown on the drawing.
- d. Containment assembly drain isolation valves 1SI080A and 1SI080B are not shown on the drawings.

A comparison between the drawings, as-built plant, and the prestart mechanical checklist revealed that the following valves were missing from the checklist:

1SI106	1SI107
1SI046	1SI047
1SI089	1SI090
1SI8983A	1SI8984A
1SI8983B	1SI8984B
1SI8983C	1SI8984C
1SI8983D	1SI8984D
1SI058A	1SI058B
1SI073A	1SI073B
1SI108	1SI109

Reviews of the drawings, procedures, and checklist revealed that Accumulator Vent Control Valve 1SI0943 was listed in the checklist, used in the procedures, but not shown on the drawing. Further inspection showed that a Hagan controller for 1SI0943 was installed on the Main Control Board and an earlier revision of the drawing (M-61, Sheet 6, Revision N) showed the valve tied to the accumulator's common vent header. During the walkdown of the SI system the inspector was unable to physically locate the valve. Review of the system shows that without 1SI0943 the accumulators cannot be vented without making a containment entry to remove a pipe cap and open a valve. This discrepancy is an open item (456/85053-09(DRP); 457/85051-04(DRP)) pending review and evaluation by the licensee staff and the inspector.

10. Fire Protection

a. Compliance with Requirements for Receipt of Fuel Onsite

Section IX of the NRC's Safety Evaluation Report dated October 8, 1985, assessing the adequacy of the facility to store nuclear fuel, concluded that fire fighting equipment consisting of portable fire extinguishers; fire hose stations and automatic fire detectors located throughout the fuel storage areas provided adequate fire

protection features for the fuel storage facility. The SER states that if the automatic alarm system for the fuel handling building is not functional whenever fuel is onsite, the licensee will provide a 24-hour fire watch in the areas adjacent to the fuel storage locations. This commitment is stated as Condition No. 28 of NRC Materials License No. SNM-1938.

The licensee's plans for making the required fire protection features fully operational prior to receipt of fuel onsite as required by Section 3.1.e(1) of the Braidwood Fire Protection Report were reviewed by the inspector. The licensee is aware of these requirements and plans to comply as follows:

- (1) Fire Hose Stations: The licensee plans to provide appropriate fire fighting hardware and pre-operational test Fuel Handling Building fire hose stations prior to receipt of fuel onsite. Adequate hose lengths and six straight stream nozzles will be provided on hose stations in the new fuel storage area. Hydrostatic testing of hose stations in the fuel handling building is scheduled on November 16, 1985. In addition, the licensee plans to make fire hose stations adjacent to the fuel storage areas useable (not fully pre-op tested) to facilitate manual fire fighting in areas that represent a fire exposure to these areas.
- (2) Water Supply for Hose Stations: Pre-operational testing of fire pumps and water supplies in accordance with the licensee's commitment to NFPA Standard No. 20 was in progress at the time of the inspection (November 13, 1985).
- (3) Automatic Fire Detection System: At the time of the inspection, pre-operational testing of products of combustion (Ionization) fire detectors in the fuel handling building was complete. The licensee indicated that additional pre-operational testing of ultra-violet fire detectors on the refueling floor will be completed prior to receipt of fuel onsite.
- (4) Portable Fire Extinguishers: The licensee indicated that portable fire extinguishers will be installed throughout the fuel handling building in accordance with the licensee's commitment to NFPA Standard No. 10, prior to receipt of fuel onsite.
- (5) Pre Fire Plans and Fire Brigade Equipment Surveillance: The licensee indicated that pre-firefighting plans and fire brigade equipment surveillances will be in place prior to receipt of fuel onsite. In addition, documentation demonstrating the operability of communications (portable radios and temporary telephones) between the fuel handling building and the control room will be available.

- (6) Fire Barrier Penetration Seals: The licensee indicated that all fire barrier penetration seals in the fuel handling building would not be complete prior to receipt of fuel onsite due to continuing construction activities. Where unsealed fire barrier penetration openings exist in the new fuel storage area, the licensee proposes to implement an hourly fire watch patrol as an interim compensatory measure. Based on operable fire protection features throughout the fuel handling building, the availability of usable fire hose stations in adjacent areas as discussed in Paragraph (1) above, and previous NRC positions taken at Byron and other plants, the inspector determined this to be acceptable.

b. Fire Seal Installation

The licensee has developed a computer program entitled, "Edison Brimpen" which tracks the status of all fire barrier penetration seals and required compensatory measures for inoperable seals. Sargent & Lundy computer program entitled "Mapper" tracks the design summary and installation schedules for all fire, radiation, and air penetration seals. Each penetration seal can be identified by a floor and wall seal numbering system which designates a number for the installing contractor, the sealing material, common areas to both units, associated drawings, and internal conduit seal. The licensee's "Plant Barrier Impairment Procedure No. PCD-35," established methods by which the project construction department will control the integrity of installed air, water, fire, and radiation barriers throughout the plant.

Regarding the quality of fire barrier penetration seal installations the inspector reviewed required instructions, procedures, and drawings. During plant tours, the inspector observed craftsmen mixing and pouring "Fire Code CT Gypsum Cement" fire barrier penetration seal material. This review and observation was determined satisfactory except as follows:

- (1) Control of Mix Proportions: The installing contractor's (Transco Products Inc.) Procedure No. PSQAP9.1BR (Revision 4) specifies instructions for mixing the gypsum material with water and periodic "slump tests" of the slurry mix. According to the procedure, "slump tests are performed a minimum of once per half day when the gypsum material is being applied." For traceability purposes, the material supplier has assigned numbers for each batch (20 five pound bags) of material manufactured. Each bag of the material has a batch number and a green stripe printed on it to indicate the material is acceptable for production use. The gypsum powder/water mix ratios are specified to obtain a desired slump; however, after slump testing, an accelerator solution is added to the gypsum slurry by field installers just prior to filling penetration openings in order to obtain a desired setting time. The amount of accelerator added to the gypsum slurry is controlled only by the individual judgements of field installers.

Although addition of the accelerator solution appears to affect setting time only, to achieve consistency in fire barrier penetration seal installations other than internal conduits, the inspectors requested that the licensee develop and specify to craftsmen, appropriate mix proportions of the accelerator solutions to be added to the gypsum slurry (particularly large surface areas).

- (2) Size of Penetration Opening: Transco Products Inc. Fire Test data which was submitted to NRR in response to Item No. 82-54-05 of Region III Inspection Report No. 373/82-54 for LaSalle County Station documented acceptable test results for various large fire barrier penetration seal configurations at LaSalle. Some larger, unique fire barrier penetration seal configurations (i.e., control room floor penetrations) were not supported by documented test data attesting to the fire rating of the penetration seals.

Consistent with the LaSalle approach, the licensee is requested to identify and evaluate the fire resistivity of all fire barrier penetration seal configurations exceeding the dimensions of those configurations supported by the Transco Products Inc. Fire Test data that was submitted to NRR. Furthermore, the licensee is requested to identify and evaluate all fire barrier penetration seals where the fire barrier itself has less depth than the tested fire code CT Gypsum and Thermafiber CT felt penetration seal assembly (floors or walls that have a depth of less than 9 inches thick).

- (3) Cable Density: A Factory Mutual Research Laboratory Test Report, dated February 17, 1982 approved "fire code CT Gypsum cement and Thermafiber CT felt" as a 3-hour fire rated assembly. The test report points out that this fire resistive rating is obtained only by strict conformity with the construction of the tested assembly. The test report limits the cable density fill criteria to 40 percent of a penetration opening cross-sectional area.

In response to concerns about cable density fill criteria that were raised by the NRC at LaSalle, a July 27, 1983, correspondence from Sargent & Lundy Engineers to the licensee (J. S. Esterman-S&L SCE-1853 to T. E. Watts-CECo) identified 15 fire barrier penetration seals that had a cable density that exceeded 40 percent of the penetration opening cross-sectional area, thereby violating the fire resistive rating of the penetrating seal. Nine of these penetration seals were required by the LaSalle Unit 1, safe shutdown analysis.

The licensee is requested to evaluate fire protection cable density fill criteria and document onsite corrective actions taken where necessary.

This (Items (1) thru (6)) is considered an Open Item (456/85053-06(DRP); 457/85051-01(DRP)) pending verification by Region III.

c. Relocation of Fire Hose Station (K-14 to K-17)

The licensee proposed a directional change for a fire hose station located at Column-Row K-14 to Column-Row K-17. NRR's review of this proposed change could not validate this change as indicated in the "Braidwood Fire Protection Report" because Diagram No. M-52, Sheet II did not give the proper designator to the hose station. The diagram indicated that a hose station was installed at Column-Row K-14.

A hose station is not installed at Column-Row K-14. The licensee's original proposed change contained a typographical error. According to the licensee, the original proposed change was to relocate the fire hose station at Column-Row K-18 in the turbine building at Elevation 451' to Column-Row L-14 in the turbine building at Elevation 451'. The purpose for this change was to facilitate manual fire fighting efforts in the control room from the hose station located at Column-Row L-14 rather than from Column-Row K-18.

Subsequent to the proposed change, the licensee decided not to relocate the hose station at Column-Row K-18 and to instead install a new hose station at Column-Row L-14. Diagram No. M-52, Sheet II was revised by Drawing Revision No. DRN P&ID-2148, dated September 16, 1985, to require installation of the new hose station and hose reel No. 292. This change may be generic to both Braidwood and Byron. This is considered an Open Item (456/85053-07(DRP); 457/85051-02(DRP)) pending verification of the hose station installation by Region III.

d. Unqualified Control Valves Installed in the Fire Hose Station Standpipe System

The licensee committed to comply with the requirement of NFPA Standard No. 14 for fire hose station standpipe systems. This commitment is stated in Section 3.6.c(4) of the Braidwood Fire Protection Report. Section 1-8 of NFPA 14-1983 requires all valves in fire hose station standpipe systems to be approved.

The licensee has installed numerous control valves inside containment in the fire hose station standpipe system that are not listed by Underwriters Laboratories (UL) as required by NFPA Standard No. 14. These valves are manufactured by Anchor Darling Inc., ITT Grinnell Inc., and Powell Valves Inc. They are seismically designed but not UL listed. According to UL, these valves are constructed to UL Standard No. 262, but they are not UL listed because UL listings are not commercially available for seismic class materials.

The inspectors informed the licensee that since the valves were designed and constructed to perform the same function as approved valves that are UL listed, this may be an acceptable deviation from NFPA Standard No. 14 if identified and justified to NRR. This is considered an Open Item (456/85053-08(DRP); 457/85051-03(DRP)) pending verification of the licensee's corrective actions by Region III.

11. Schedule Changes

During the assessment period, the licensee announced a new construction budget timetable where Braidwood Unit 1 is expected to be in service by May 31, 1987 (a delay of about seven months) and Unit 2 by September 30, 1988 (a delay of about nine months).

Along with these delays, the licensee rescheduled operator licensing exams in an effort to provide additional training to the examinees.

No violations or deviations were identified.

12. Meetings, Training and Other Activities

On November 5, 6, and 7, 1985, the inspector attended a resident inspector seminar in Aurora, Illinois. The seminar was a series of presentations by regional and headquarters personnel for updating the inspector on commission activities and briefings on technical and administrative issues.

On November 8, 1985, the inspectors attended the public critique on the Braidwood emergency exercise held on November 6, 1985. The critique was presented by NRC regional personnel and Federal Emergency Management Agency (FEMA) personnel. Specifics are addressed in a special inspection report, 456/85037(DRSS); 457/85036(DRSS).

During the inspection between November 2 and November 30, 1985, the inspectors attended licensee training sessions for training and observation. The classes attended were Nuclear General Employee Training (NGET) and Training for Receipt, Inspection and Storage of New Fuel. The Health Physics portion of the receipt of new fuel is addressed in Paragraph 4, "New Fuel Receipt Preparedness." Otherwise, the training demonstrated good planning and presentation.

13. 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 7, 8, 9, and 10.

14. Exit Interview

The inspector met with licensee and contractor representatives denoted in Paragraph 1 during and at the final exit meeting on November 27, 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.