

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-456/84-13(DRP); 50-457/84-13(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 Nuclear Power Station, Units 1 and 2

Inspection Conducted: June 5 through July 6, 1984

Inspectors: L. G. McGregor

R. D. Schulz

Approved By: 
W. L. Forney, Chief
Projects Section 1A

8/06/84
Date

Inspection Summary

Inspection on June 5 through July 6, 1984 (Report No. 50-456/84-13(DRP);
50-457/84-13(DRP))

Areas Inspected: Routine, unannounced safety inspection of licensee action on construction deficiency reports and bulletins, plant tours, preventive maintenance, spent fuel storage racks, pipe supports, procurement, cable pan supports, audits, and reactor coolant pump supports. The inspection consisted of 164 inspector-hours onsite by two NRC inspectors including 4 inspector-hours onsite during off-shifts.

Results: Of the nine areas inspected, no item of noncompliance or deviations were identified in seven areas, two items of noncompliance were identified in the remaining areas, failure to specify the application of 10 CFR Part 21 to procurement documents (paragraph 7) and failure to control weld rod for cable pan welding (paragraph 8).

DETAILS

1. Persons Contacted

Commonwealth Edison Company (CECo)

M. Wallace, Project Manager
C. Schroeder, Licensing and Compliance Superintendent
*D. L. Shamblin, Construction Superintendent
*T. Quaka, Quality Assurance Supervisor
L. Tapella, Engineer
*L. M. Kline, Licensing Compliance
S. Hunsader, Quality Assurance Supervisor
G. Fitzpatrick, Assistant Manager Quality Assurance Corporate
*J. Purrazzo, Engineer
M. Curinka, Engineer
*C. J. Tomashek, Startup Superintendent
N. Tomis, OAD Supervisory Engineer
J. Enger, Senior Buyer
R. Milne, Field Engineer
K. Steele, Electrical Supervisor
E. R. Netzel, Quality Assurance Supervisor
*T. Ronkoske, Engineer
*R. Wrucke, Licensing Engineer
*M. Gorski, Engineer
*D. A. Boone, Engineer

Phillips Getschow Company (PGCo)

T. G. O'Connor, Site Manager
J. Carlson, Quality Control Supervisor
L. J. Butler, Assistant Quality Control Supervisor
M. Galloway, Assistant Project Engineer
J. Strong, Quality Control Technician
R. Tesmond, Quality Control Level II

L. K. Comstock and Company, Inc. (LKC)

*I. Dewald, Quality Control Manager
L. G. Seese, Assistant Quality Control Manager Site
R. M. Saklak, Quality Control Supervisor
R. Brown, Lead Inspector Mechanical
R. Frisby, Level II Quality Control Inspector
*R. Seltman, Quality Assurance Engineer

Pittsburgh Testing Laboratory (PTL)

T. Frazier, Assistant Site Manager
R. Vanderhyden, Construction Engineer

In addition, a number of other plant personnel were contacted.

*Denotes those personnel attending the exit interview.

2. Licensee Action on Previously Identified Items

a. 10 CFR 50.55(e) Items

(Closed) 456/81-02; 457/81-02: During the stressing of a tendon on the Braidwood Unit 1 containment, a thread failure occurred between the shop anchorhead bushing and the stressing adapter due to both the lack of full thread engagement and undersized anchorhead threads. Analysis showed that the in-place stressed anchorages are acceptable. Corrective action for unstressed anchorages included a checkpoint in the stressing procedures to assure full thread engagement and measurements of all anchorage components prior to stressing.

(Closed) 456/82-02A; 457/82-02A: Fifteen fire dampers may not close due to a deficiency in the fusible link. The defective links have been replaced. All future dampers will be checked for proper link installation.

(Closed) 456/82-11; 457/82-11: A potential problem existed with regard to rigid snubber strut pins. Subsequently, tensile testing resulted in no deformation of the pin material and no pins tested were found to have low yield strength. In addition, the pin is not considered to be a critical hanger component.

(Open) 456/83-15; 457/83-15: Pacific Scientific (PS) snubbers supplied with capstan springs may be defective and fail during a seismic event. Subsequent testing and metallurgical evaluation revealed that the snubbers met design requirements and there is no reportable deficiency. However, a PS letter dated February 10, 1984 recommended that "due to the various potentially harsh environments on usage some snubbers might experience, these snubbers be the first to be inspected during normally scheduled plant inservice or maintenance inspections." The inspector was unable to determine that the licensee had performed any evaluation or scheduled any of the snubbers for the first plant inservice or maintenance inspection. This item will remain open until the licensee addresses the PS recommendations.

b. IE Bulletins

(Closed) IE Bulletin 83-01: Failure of Reactor Trip Breakers (Westinghouse DB-50) to Open on Automatic Trip Signal. The inspector examined the licensee's action relative to the reactor scram breaker failures to determine whether a timely response was sent to the NRC, if the response addressed the appropriate technical questions, and whether the required actions had been accomplished. The Braidwood design incorporates four DS-416 rather than DB-50 breakers. In response to Bulletin 83-01 the licensee has received Westinghouse Change Notice (83) 823 which includes a procedure for changing the undervoltage trip assembly, mounting instructions and trip load and force checks for the breakers. The corrective action recommended by the manufacturer will be completed by the licensee before fuel load and a review of the breaker maintenance program for conformance to recommended Westinghouse program will be implemented.

(Closed) IE Bulletin 83-06: Nonconforming Material Supplied by Tube Line Corporation. The licensee has reviewed the list of purchasing and receiving companies given in Attachments 2 and 3 of the bulletin and in addition has reviewed station purchasing records for material which may have been supplied by Tube Line. The search of records has shown that four 3-inch 150 pound RF W/N flanges were supplied to the Braidwood Station by the Joliet Valve Co. Two of these flanges were installed in the Boric Acid System and two were installed in the Containment Spray System. One flange has subsequently been removed from the Containment Spray System and the remaining three flanges will be replaced upon receipt of new flanges.

(Closed) IE Bulletin 83-07: Apparently Fraudulent Products Sold by Ray Miller, Inc. The licensee has addressed the subject bulletin by a review of corporate purchasing procedures with respect to the problems encountered with Ray Miller, Inc. and Tube Line Corporation (Bulletin 83-06 response). The licensee has reviewed the purchasing records for Braidwood Construction and Braidwood Operations Departments with no indication that material was purchased from Ray Miller, Inc. CECo reviewed its Quality Assurance procedures for review of purchase documents and found them to be adequate.

(Closed) IE Bulletin 83-08: Circuit Breakers with An Undervoltage Trip in Use in Safety-Related Applications Other Than the Reactor Scram System. A review completed by the CECo Braidwood technical staff has concluded that W type DB, W type DS and GE type AK-2 with undervoltage trip attachments are not used in safety-related applications, outside the reactor scram system.

No items of noncompliance or deviations were identified.

3. Plant Tours

The inspectors observed work activities in-progress, completed work, and plant status during general inspections of the plant. Observation of work included high strength bolting, safety-related pipe welding, anchor bolts, structural welds, and cable trays in the containments and auxiliary building. Particular note was taken of material identification, nonconforming material identification, housekeeping, and equipment preservation. Craft personnel were interviewed as such personnel were available in the work areas.

No items of noncompliance or deviations were identified.

4. Preventive Maintenance

The maintenance program for mechanical and electrical equipment was reviewed to assure that pump shafts were being periodically rotated, rotating equipment was lubricated, equipment was properly covered for protection from construction activities, insulation resistance testing was performed for motors and heat was being applied to electrical items, and desiccant, vapor inhibitors, or nitrogen purges were used to maintain proper humidity

levels. The following pieces of installed equipment and their associated records were examined for the applicable elements stipulated above:

- . 2CC01PA, Component Cooling Pump and Motor
- . 1CS01PA, Containment Spray Pump and Motor
- . 2CS01PA, Containment Spray Pump and Motor
- . 2AP73E, 480 Volt Switchgear Panel
- . 2AP17E, 480 Volt Switchgear Panel
- . 2RC01PB, Reactor Coolant Pump and Motor
- . 2FW01PA, Auxiliary Feedwater Motor
- . 2CV04AA, Letdown Heat Exchanger
- . 2FC01P, Spent Fuel Pit Pumps
- . 2SX01PB, Essential Service Water Pump
- . 0W001PA, Main Control Room Chilled Water Pump
- . 0W001PB, Main Control Room Chilled Water Pump
- . 1RH01PA, Residual Heat Removal Motor
- . 1SI01PA, Safety Injection Motor
- . 2SI01PA, Safety Injection Pump and Motor
- . 2CV01PB, Centrifugal Charging Pump
- . 2RH01PA, Residual Heat Removal Pump

The inspector noted that the equipment was poorly covered for protection from construction activities. This is considered an open item (456/84-13-01; 457/84-13-01).

A review of Phillips, Getschow Co. Procedure, PGCP-37, Revision 1, Equipment Surveillance, revealed that equipment was divided into three categories:

- . "Category A" - rotating equipment which requires periodic rotation and lubrication
- . "Category B" - requires protective purge gas prior to attachment of piping systems
- . "Category C" - other safety-related equipment.

Phillips, Getschow Co. quality control inspectors performed surveillances of mechanical equipment, but their inspections mainly involved documentation checks and were on a limited, random basis, not being extensive enough to assure that all mechanical equipment was properly maintained by the craftsmen. Although, based on the NRC sample inspection, craft records and maintenance appeared adequate, the mechanical equipment quality assurance organization needs to establish an inspection program to verify adequate craft attention to the preventive maintenance function. Furthermore, the inspector could not find inspection or surveillance records documenting that mechanical equipment quality control inspectors had witnessed any shaft rotations or lubrications. Pending licensee review of this area, including considering the examination of all mechanical equipment to assure that the equipment has been properly maintained; and subsequent NRC review, mechanical equipment maintenance will remain unresolved (456/84-13-02; 457/84-13-02).

The only mechanical items that required gas purges, as stipulated in PGCP-37, were the accumulators and the control room refrigeration units. Vapor inhibitors or the coating of internal parts was not a part of the mechanical contractor's preventive maintenance program. Options, especially for heat exchangers, employed by the nuclear industry include:

- . Maintaining purges as long as possible prior to start-up and incorporation into plant systems, and making piping connections last.
- . The use of humidity indicators attached to or inside components.
- . Desiccant used as vapor inhibitors.
- . Internals specially coated by manufacturers for long term storage.
- . Vapor inhibitors, such as Cortec VCI-319, used for extended storage periods since the inhibitors can be flushed from the system (water soluble).

Humidity conditions can become extremely high for equipment stored in place as a result of concrete pours or other systems being flushed. The inspector has requested the licensee to assess the importance of these options considering the length of time items have not been in service. Pending licensee assessment, this issue will remain open (456/84-13-03; 457/84-13-03).

The electrical contractor's (L. K. Comstock) preventive maintenance program was reviewed, including Procedure 4.10.2, Receiving and Storage, Revision A, and the inspector identified the following issues:

- . Although Procedure 4.10.2 required that electrical equipment be checked to assure that heaters were properly working, L. K. Comstock did not have a list of the equipment that required heaters and the L. K. Comstock quality control inspector did not document which equipment was being checked for heaters.
- . The licensee did have a list of maintenance required for electrical equipment, such as covers to protect the equipment and the use of motor winding heaters, but this list was not included in any procedure nor was objective evidence provided to the inspector documenting that manufacturer recommendations for maintenance were included in this list. L. K. Comstock's quality control organization was not aware of the licensee's list.

The inspector has requested the licensee to review the electrical equipment maintenance requirements, taking into consideration manufacturer recommendations and/or Sargent and Lundy recommendations. Subsequent to this review and the conclusions reached, the licensee should address L. K. Comstock's responsibility in assuring the maintenance of electrical equipment, including the quality control inspection function.

The NRC will review the electrical maintenance program after:

- . The licensee determines the adequacy of the electrical equipment maintenance program,
- . The licensee conducts quality control inspections, if required,
- . The licensee determines L. K. Comstock's responsibility in assuring maintenance of electrical equipment.

Pending these licensee actions and NRC review, the electrical equipment maintenance program will remain unresolved (456/84-13-04; 457/84-13-04).

No items of noncompliance or deviations were identified.

5. Spent Fuel Storage Racks

The contractor that fabricated the 6x5 and 6x6 spent fuel storage racks was NUS Corporation. The inspector reviewed Specification F/L-2743, New And Spent Fuel Storage Racks dated January 7, 1976 through Amendment 2 dated June 28, 1983, and NUS Corporation Specification 5106-M-200 Revision C, which was approved by Sargent and Lundy on January 13, 1978. These two documents established the fabrication requirements for the storage racks. The following drawings delineated the dimensional requirements and weld details:

- . 5106M 2000 Revision 2
- . 5106M 2001 Revision 7
- . 5106M 2002 Revision 8

After reviewing these drawings, a 6x5 rack and a 6x6 rack were examined for conformance to the drawings requirements, including:

- . Width and length dimensions
- . Component dimensions - (shear plates, collar bars, corner support plates, module support plates, support beams, and gusset plates)
- . Separation dimensions
- . Structural welds - (gusset plate to beam welds, plate to beam welds, gusset plate to support plate welds, collar bar to support plate welds, and shear plate welds)

One rack's flare plates at the end of the alignment box were damaged and one rack's support beams, (quantity of two), were deformed. The inspector identified these racks to the licensee and the licensee documented these conditions for resolution. Pending licensee evaluation and corrective action if necessary, and NRC review, the acceptance of these two spent fuel storage racks will remain unresolved (456/84-13-05; 457/84-13-05).

It was noted that the welds attaching the 79" long collar bar to the 3" x 83" support plate were not symmetrical. The pieces were connected by 9" long welds on the ends, and 3" long intermittent welds with centers

ranging from 5 1/2" to 8 1/2". The inspector was unable to identify this particular weld detail on the drawings to determine weld acceptability. Pending this information being supplied to NRC and subsequent review, this weld detail will remain an open item (456/84-13-06; 457/84-13-06).

The fabrication documentation was reviewed and the inspector identified the following items, which the licensee is presently investigating and evaluating for resolution:

- . welding procedure qualifications as required by specification F/L-2743, identified as being used for specific welds or components, were not available for review.
- . welder qualifications as required by specification F/L-2743, were not available for review.
- . penetrant material test reports, as required by specification 5106-M-200, were not available for review.
- . NUS Visual Weld Inspection Procedure 763, Revision 1, was not available for review.
- . the majority of the visual weld inspection records for the root and completed welds, as required by specification 5106-M-200, were not available for review.
- . joint preparation inspection records for dimensional and cleanliness conformance, as required by specification 5106-M-200, were not available for review.
- . surface roughness and interior edge inspection records, as required by specification 5106-M-200, were not available for review.
- . penetrant test reports did not identify the specific components penetrant tested, nor if both the applicable root and final passes were inspected, as required by NUS Procedure 761, Revision 5, and specification 5106-M-200.
- . the inspector was unable to trace the certified material test reports for the collar bars, as required by specification 5106-M-200, for the majority of the storage rack assemblies.
- . The inspector was unable to trace the certified material test reports for the welding materials to the specific joints or components, as required by specifications 5106-M-200 and F/L-2743.
- . Penetrant Test Report, dated March 22, 1979, shop order #3913, was not traceable to a spent fuel storage rack assembly serial number.

The licensee stated that they believe adequate documentation does exist, but it may not be filed on site. Pending licensee investigation and submittal of additional documentation to the NRC at the Braidwood site for

review, documentation acceptability for the spent fuel storage racks will remain an unresolved issue (456/84-13-07; 457/84-13-07).

No items of noncompliance or deviations were identified.

6. Pipe Supports

Twenty pipe supports were examined for conformance with the drawing requirements. Attributes checked included:

- . Configuration
- . Weld details
- . Dimensional tolerances and offset gaps
- . Location
- . Correct components

Identified below are the installed component supports which were examined, the type of support, location, and if applicable, an engineering change notice (ECN), which revised the installation:

<u>Support</u>	<u>Type</u>	<u>Location</u>	<u>ECN No.</u>
M-1SX09044X	sway-strut	containment #1	16559
M-1SX03038X	rigid	containment #1	12196
M-1CV05020R	rigid	containment #1	
M-1CV05022X	sway-strut	containment #1	
M-1CV05027R	rigid	containment #1	
M-1CV05021X	sway-strut	containment #1	
M-1CV05099X	sway-strut	containment #1	
M-1CV05023R	sway-strut	containment #1	
M-1CV05024R	sway-strut	containment #1	
M-1CV05025X	sway-strut	containment #1	
M-1CV05026R	rigid	containment #1	
M-1CV54004X	sway-strut	auxiliary building	
M-1CV54005R	rigid	auxiliary building	
M-1CV01028X	rigid	auxiliary building	
M-1CC03073R	rigid	auxiliary building	
M-1CC03136R	sway-strut	auxiliary building	
M-1CC03150X	sway-strut	auxiliary building	15907
M-1CV54001R	rigid	auxiliary building	
M-1CV54003X	sway-strut	auxiliary building	
M-1CC02136X	sway-strut	auxiliary building	

No items of noncompliance or deviations were identified.

7. Procurement

Procurement documents specifying material for the electrical discipline were checked for technical adequacy, QA program requirements, 10 CFR 21 provisions, identification of items, and if the supplier was on the approved bidders list. In addition, Commonwealth Edison material receipt

inspection reports and documentation, such as certified material test reports and certificates of conformance, were reviewed for conformance to the procurement documents. The following purchase orders and their associated receipt inspection documentation were examined:

<u>Purchase Order No.</u>	<u>Vendor</u>	<u>Product Type</u>
728208	Northern Ill. Steel	ASTM A36 plate
249282	Northern Ill. Steel	ASTM A36 plate
266483	Haggerty Steel	Structural Steel
259707	Haggerty Steel	Tube Steel, Plate
256493	Haggerty Steel	Tube Steel, Plate
252162	Raychem Corp.	Heat Shrink Tubing
254434	Raychem Corp.	Heat Shrink Tubing
259782	Raychem Corp.	Heat Shrink Tubing
262155	Raychem Corp.	Heat Shrink Tubing
265347	Raychem Corp.	Heat Shrink Tubing
270934	Raychem Corp.	Heat Shrink Tubing
276436	Raychem Corp.	Heat Shrink Tubing
256523	Raychem Corp.	Heat Shrink Tubing
272787	Raychem Corp.	Heat Shrink Tubing

The procurement documents and receipt inspection records were in accordance with regulatory requirements with the exception of six orders placed with Raychem Corporation. The heat shrinkable tubing was ordered under the requirement that documentation shall include a certificate of compliance certifying that the material had been tested to the requirements of IEEE 383-1974 for aging, radiation, and LOCA environment, as stipulated by Sargent and Lundy drawing 20-E-1-3503, dated February 1, 1979, and L.K. Comstock Procedure 4.3.9, Cable Termination Installation, Paragraph 3.11.5 - Lug to Bus Connection, 4160V and 6900V Connections. The certification for aging, radiation, and LOCA environment was received for all the Raychem Corp. purchase orders delineated above. However, Raychem Corp. procurement documents, numbers 252162, 254434, 259782, 262155, 265347, and 270934 did not contain statements that 10 CFR Part 21, "Reporting of Defects And Noncompliance", applied to these heat shrink tubing orders. 10 CFR 21.31 Procurement Documents states: "Each individual, corporation, partnership or other entity subject to the regulations in this part shall assure that each procurement document for a facility, or a basic component issued by him, her or it on or after January 1, 1978 specifies, when applicable, that the provisions of 10 CFR Part 21 apply."

Detailed below are the procurement documents and their date of placement:

<u>Procurement Document No.</u>	<u>Date of Placement</u>
252162	02/02/81
254434	08/03/81
259782	01/22/82
262155	04/14/82
265347	06/23/82
270934	11/22/82

Failure to specify the application of 10 CFR Part 21 to these procurement documents is a violation of 10 CFR 21.31 (456/84-13-08; 457/84-13-08).

8. Cable Pan Supports

The structural supports for ten cable pans located in the auxiliary building were examined for conformance to the drawings, including configuration, dimensions, and welding details. Detailed below are the cable pans and their applicable supports:

<u>Cable Pan</u>	<u>Support I.D.</u>	<u>Type</u>
21752J	H-181, H-189	unistrut
21750J	H-188	unistrut/braced
21747J	H-185, H-186, H-187	unistrut/H-186 braced
21746J	H-183, H-184, H-185	unistrut/H-183 braced
21779J	H-160	tube steel
21777J	H-170, H-171	unistrut
21772J	H-137, H-138	tube steel/H-137 braced
21773J	H-175	unistrut
21764J	H-142	unistrut
21765J	H-140	unistrut/braced

Documents utilized in the examinations included:

- . Sargent and Lundy drawings 20E-0-360 series and 20E-0-380 series for welding details.
- . Sargent and Lundy drawing 20E-0-3251, Cable Pan General Notes and Installation Details.
- . Sargent and Lundy drawing 20-E-03278 for configuration.
- . Sargent and Lundy Hanger List for dimensional requirements.

Subsequently, the inspector reviewed L. K. Comstock inspection reports for these cable pan installations, and Pittsburgh Testing Laboratory inspection reports that documented a 10% overview weld inspection. Procedures reviewed included L. K. Comstock Procedures 4.8.3, Weld Inspection and 4.3.10, Storage, Issue and Control of Welding Material. Inspection reports were in accordance with procedure requirements and the weld rod was found to be stored in accordance with the procedure requirements, including oven temperature adherence. However, the inspector discovered that weld rod was allowed to be stored overnight in the portable rod oven heaters, instead of being returned to the issue stations. There are approximately one-hundred portable ovens and quality control does not assure that these ovens are plugged in at night and furthermore, surplus weld rod should be returned to the issue stations in order that it may be signed out to a specific

application/component for traceability control. The inspector discussed these points with the licensee and the licensee has decided that all surplus weld rod must be returned to an issue station after the days shift, to facilitate optimum weld rod control. L. K. Comstock was notified of the licensee's decision and therefore, the inspector considers this issue closed.

Over 300 filler metal withdrawal authorization forms, which document the release of weld rod for electrical installations, were reviewed for the months of May 1982 through August 1982. This was the time frame the cable pans were installed. The filler metal authorization forms were specific as to the use of the weld rod, specifying one of the following on each form:

- . conduit hangers
- . cable support
- . cable pan
- . switchgear
- . junction box hangers

However, the forms did not specify the specific component the rod was used on and only listed general building locations, such as Auxiliary Building, elevation 463 feet. Nine filler metal withdrawal authorization forms documented the assignment of E7018 weld rod for cable pan welding, even though Sargent and Lundy drawing 20E-0-3251, Revision AC and L. K. Comstock Procedure 4.3.3, dated January 29, 1982, required the use of E60 Series weld rod for cable pan welds. Detailed below are the nine forms documenting the release of E7018 weld rod by heat number, for cable pan welding:

<u>Date of Requisition</u>	<u>Area</u>	<u>Heat No.</u>	<u>Designated Class</u>
5/25/82	Auxiliary Bldg., 383'	411P4161	*E6013
5/25/82	Auxiliary Bldg.	411P4161	*E6013
5/26/82	Auxiliary Bldg.	411P4161	*E6013
6/9/82	Auxiliary Bldg., 383'	411P4161	*E6013
6/10/82	Containment #1, 426'	411P4161	E7018
6/11/82	Auxiliary Bldg., 426'	421P4461	E7018
6/22/82	Auxiliary Bldg., 426'	402S9011	E7018
7/13/82	Auxiliary Bldg., 463'	402S9011	*E6013
7/28/82	Auxiliary Bldg., 439'	402S9011	E7018

*Heat numbers 411P4161 and 402S9011 were actually E7018 weld rod as the inspector reviewed the material certifications. The rod issue attendants apparently thought these heats of rod were E6013. Note that the same heats, 411P4161 and 402S9011, were handed out as both E6013 and E7018 weld rod.

Failure to control the use of weld rod for cable pan welding is a violation of 10 CFR 50, Appendix B, Criterion IX (456/84-13-09; 457/84-13-09).

9. Audits

Commonwealth Edison recent site audits were reviewed. Past NRC inspection findings identified deficiencies in the Braidwood Site audit program with regard to depth of audits and corrective action. The recent audits revealed significant improvement in audit technique, depth, identification of problem areas, corrective action, and actions to prevent recurrence. The audits met the regulatory requirements and were carried out with the purpose of identifying and correcting any deficiencies that could affect the safe operation of the plant. The audits reviewed and area covered are detailed below:

<u>Audit Dates</u>	<u>Area</u>	<u>Discipline</u>
6/11/84-6/16/84	Calibration, Measuring and Test Equipment	HVAC
	Storage	HVAC
	QC Inspections	HVAC
	Welding/Weld Rod Control	HVAC
4/17/84-4/27/84	Receiving and Material Control	Piping
	Storage	Piping
	Housekeeping	Piping
	Corrective Action	Piping
	Small Bore Pipe	Piping
	Piping/Support Layout	Piping
	Support Installation	Piping
	Material Traceability	Piping
4/16/84-4/23/84	Identification and Control of Equipment and Components	Electrical
	QC Inspector Qualifications	Electrical
	Welding/Weld Rod Control	Electrical
	Re-inspection Program	Electrical

The audits included both documentation (software) and installation (hardware) inspections.

No items of noncompliance or deviations were identified.

10. Inspection of Reactor Coolant Pump Supports

The inspector reviewed Sargent and Lundy design drawings No. S1107, S1109 "Reactor Coolant Pump Support" Plan Elevation 393'2" and Taledyne Brown Engineering Drawing No. 22287 "Byron/Braidwood Station N.S.S.S. Support Framing Reactor Coolant Pump Lateral Support Erection" and noted discrepancies between the as-built condition and the designed lateral support. This lateral support modification affected just reactor coolant pump number 2 in units one and two. The inspector requested documentation to substantiate the nonconformance which resulted in the modification, the

Engineering Change Notice, the Design Change review and approval, material specifications, qualified welding procedures, Quality Control records and inspections, and welder qualifications. Additionally, the inspector will determine if this modification was also installed on the Byron reactor coolant pumps. This matter is considered an unresolved item and will be reviewed during future inspections (50-456/84-13-10; 50-457/84-13-10).

11. Open Items

Open items are matters which have been discussed with the licensee, which will be reviewed further 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 4 and 5.

12. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. Unresolved items disclosed during the inspection are discussed in Paragraphs 4, 5 and 10.

13. Exit Interview

The inspector met with licensee representatives (denoted under Persons Contacted) during and at the conclusion of the inspection on July 6, 1984. The inspector summarized the scope and findings of the inspection. The licensee acknowledged the information.

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W. L. Forney, Chief
Projects Section 1A

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DETAILS

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Commonwealth Edison Company (CECo)

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*T. Quaka, Quality Assurance Supervisor
L. Tapella, Engineer
*L. M. Kline, Licensing Compliance
S. Hunsader, Quality Assurance Supervisor
G. Fitzpatrick, Assistant Manager Quality Assurance Corporate
*J. Purrazzo, Engineer
M. Curinka, Engineer
*C. J. Tomashek, Startup Superintendent
N. Tomis, OAD Supervisory Engineer
J. Enger, Senior Buyer
R. Milne, Field Engineer
K. Steele, Electrical Supervisor
E. R. Netzel, Quality Assurance Supervisor
*T. Ronkoske, Engineer
*R. Wrucke, Licensing Engineer
*M. Gorski, Engineer
*D. A. Boone, Engineer

Phillips Getschow Company (PGCo)

T. G. O'Connor, Site Manager
J. Carlson, Quality Control Supervisor
L. J. Butler, Assistant Quality Control Supervisor
M. Galloway, Assistant Project Engineer
J. Strong, Quality Control Technician
R. Tesmond, Quality Control Level II

L. K. Comstock and Company, Inc. (LKC)

*I. Dewald, Quality Control Manager
L. G. Seese, Assistant Quality Control Manager Site
R. M. Saklak, Quality Control Supervisor
R. Brown, Lead Inspector Mechanical
R. Frisby, Level II Quality Control Inspector
*R. Seltman, Quality Assurance Engineer

Pittsburgh Testing Laboratory (PTL)

T. Frazier, Assistant Site Manager
R. Vanderhyden, Construction Engineer

In addition, a number of other plant personnel were contacted.

*Denotes those personnel attending the exit interview.

2. Licensee Action on Previously Identified Items

a. 10 CFR 50.55(e) Items

(Closed) 456/81-02; 457/81-02: During the stressing of a tendon on the Braidwood Unit 1 containment, a thread failure occurred between the shop anchorhead bushing and the stressing adapter due to both the lack of full thread engagement and undersized anchorhead threads. Analysis showed that the in-place stressed anchorages are acceptable. Corrective action for unstressed anchorages included a checkpoint in the stressing procedures to assure full thread engagement and measurements of all anchorage components prior to stressing.

(Closed) 456/82-02A; 457/82-02A: Fifteen fire dampers may not close due to a deficiency in the fusible link. The defective links have been replaced. All future dampers will be checked for proper link installation.

(Closed) 456/82-11; 457/82-11: A potential problem existed with regard to rigid snubber strut pins. Subsequently, tensile testing resulted in no deformation of the pin material and no pins tested were found to have low yield strength. In addition, the pin is not considered to be a critical hanger component.

(Open) 456/83-15; 457/83-15: Pacific Scientific (PS) snubbers supplied with capstan springs may be defective and fail during a seismic event. Subsequent testing and metallurgical evaluation revealed that the snubbers met design requirements and there is no reportable deficiency. However, a PS letter dated February 10, 1984 recommended that "due to the various potentially harsh environments on usage some snubbers might experience, these snubbers be the first to be inspected during normally scheduled plant inservice or maintenance inspections." The inspector was unable to determine that the licensee had performed any evaluation or scheduled any of the snubbers for the first plant inservice or maintenance inspection. This item will remain open until the licensee addresses the PS recommendations.

b. IE Bulletins

(Closed) IE Bulletin 83-01: Failure of Reactor Trip Breakers (Westinghouse DB-50) to Open on Automatic Trip Signal. The inspector examined the licensee's action relative to the reactor scram breaker failures to determine whether a timely response was sent to the NRC, if the response addressed the appropriate technical questions, and whether the required actions had been accomplished. The Braidwood design incorporates four DS-416 rather than DB-50 breakers. In response to Bulletin 83-01 the licensee has received Westinghouse Change Notice (83) 823 which includes a procedure for changing the undervoltage trip assembly, mounting instructions and trip load and force checks for the breakers. The corrective action recommended by the manufacturer will be completed by the licensee before fuel load and a review of the breaker maintenance program for conformance to recommended Westinghouse program will be implemented.

(Closed) IE Bulletin 83-06: Nonconforming Material Supplied by Tube Line Corporation. The licensee has reviewed the list of purchasing and receiving companies given in Attachments 2 and 3 of the bulletin and in addition has reviewed station purchasing records for material which may have been supplied by Tube Line. The search of records has shown that four 3-inch 150 pound RF W/N flanges were supplied to the Braidwood Station by the Joliet Valve Co. Two of these flanges were installed in the Boric Acid System and two were installed in the Containment Spray System. One flange has subsequently been removed from the Containment Spray System and the remaining three flanges will be replaced upon receipt of new flanges.

(Closed) IE Bulletin 83-07: Apparently Fraudulent Products Sold by Ray Miller, Inc. The licensee has addressed the subject bulletin by a review of corporate purchasing procedures with respect to the problems encountered with Ray Miller, Inc. and Tube Line Corporation (Bulletin 83-06 response). The licensee has reviewed the purchasing records for Braidwood Construction and Braidwood Operations Departments with no indication that material was purchased from Ray Miller, Inc. CECO reviewed its Quality Assurance procedures for review of purchase documents and found them to be adequate.

(Closed) IE Bulletin 83-08: Circuit Breakers with An Undervoltage Trip in Use in Safety-Related Applications Other Than the Reactor Scram System. A review completed by the CECO Braidwood technical staff has concluded that W type DB, W type DS and GE type AK-2 with undervoltage trip attachments are not used in safety-related applications, outside the reactor scram system.

No items of noncompliance or deviations were identified.

3. Plant Tours

The inspectors observed work activities in-progress, completed work, and plant status during general inspections of the plant. Observation of work included high strength bolting, safety-related pipe welding, anchor bolts, structural welds, and cable trays in the containments and auxiliary building. Particular note was taken of material identification, nonconforming material identification, housekeeping, and equipment preservation. Craft personnel were interviewed as such personnel were available in the work areas.

No items of noncompliance or deviations were identified.

4. Preventive Maintenance

The maintenance program for mechanical and electrical equipment was reviewed to assure that pump shafts were being periodically rotated, rotating equipment was lubricated, equipment was properly covered for protection from construction activities, insulation resistance testing was performed for motors and heat was being applied to electrical items, and desiccant, vapor inhibitors, or nitrogen purges were used to maintain proper humidity

levels. The following pieces of installed equipment and their associated records were examined for the applicable elements stipulated above:

- . 2CC01PA, Component Cooling Pump and Motor
- . 1CS01PA, Containment Spray Pump and Motor
- . 2CS01PA, Containment Spray Pump and Motor
- . 2AP73E, 480 Volt Switchgear Panel
- . 2AP17E, 480 Volt Switchgear Panel
- . 2RC01PB, Reactor Coolant Pump and Motor
- . 2FW01PA, Auxiliary Feedwater Motor
- . 2CV04AA, Letdown Heat Exchanger
- . 2FC01P, Spent Fuel Pit Pumps
- . 2SX01PB, Essential Service Water Pump
- . 0W001PA, Main Control Room Chilled Water Pump
- . 0W001PB, Main Control Room Chilled Water Pump
- . 1RH01PA, Residual Heat Removal Motor
- . 1SI01PA, Safety Injection Motor
- . 2SI01PA, Safety Injection Pump and Motor
- . 2CV01PB, Centrifugal Charging Pump
- . 2RH01PA, Residual Heat Removal Pump

The inspector noted that the equipment was poorly covered for protection from construction activities. This is considered an open item (456/84-13-01; 457/84-13-01).

A review of Phillips, Getschow Co. Procedure, PGCP-37, Revision 1, Equipment Surveillance, revealed that equipment was divided into three categories:

- . "Category A" - rotating equipment which requires periodic rotation and lubrication
- . "Category B" - requires protective purge gas prior to attachment of piping systems
- . "Category C" - other safety-related equipment.

Phillips, Getschow Co. quality control inspectors performed surveillances of mechanical equipment, but their inspections mainly involved documentation checks and were on a limited, random basis, not being extensive enough to assure that all mechanical equipment was properly maintained by the craftsmen. Although, based on the NRC sample inspection, craft records and maintenance appeared adequate, the mechanical equipment quality assurance organization needs to establish an inspection program to verify adequate craft attention to the preventive maintenance function. Furthermore, the inspector could not find inspection or surveillance records documenting that mechanical equipment quality control inspectors had witnessed any shaft rotations or lubrications. Pending licensee review of this area, including considering the examination of all mechanical equipment to assure that the equipment has been properly maintained; and subsequent NRC review, mechanical equipment maintenance will remain unresolved (456/84-13-02; 457/84-13-02).

The only mechanical items that required gas purges, as stipulated in PGCP-37, were the accumulators and the control room refrigeration units. Vapor inhibitors or the coating of internal parts was not a part of the mechanical contractor's preventive maintenance program. Options, especially for heat exchangers, employed by the nuclear industry include:

- . Maintaining purges as long as possible prior to start-up and incorporation into plant systems, and making piping connections last.
- . The use of humidity indicators attached to or inside components.
- . Desiccant used as vapor inhibitors.
- . Internals specially coated by manufacturers for long term storage.
- . Vapor inhibitors, such as Cortec VCI-319, used for extended storage periods since the inhibitors can be flushed from the system (water soluble).

Humidity conditions can become extremely high for equipment stored in place as a result of concrete pours or other systems being flushed. The inspector has requested the licensee to assess the importance of these options considering the length of time items have not been in service. Pending licensee assessment, this issue will remain open (456/84-13-03; 457/84-13-03).

The electrical contractor's (L. K. Comstock) preventive maintenance program was reviewed, including Procedure 4.10.2, Receiving and Storage, Revision A, and the inspector identified the following issues:

- . Although Procedure 4.10.2 required that electrical equipment be checked to assure that heaters were properly working, L. K. Comstock did not have a list of the equipment that required heaters and the L. K. Comstock quality control inspector did not document which equipment was being checked for heaters.
- . The licensee did have a list of maintenance required for electrical equipment, such as covers to protect the equipment and the use of motor winding heaters, but this list was not included in any procedure nor was objective evidence provided to the inspector documenting that manufacturer recommendations for maintenance were included in this list. L. K. Comstock's quality control organization was not aware of the licensee's list.

The inspector has requested the licensee to review the electrical equipment maintenance requirements, taking into consideration manufacturer recommendations and/or Sargent and Lundy recommendations. Subsequent to this review and the conclusions reached, the licensee should address L. K. Comstock's responsibility in assuring the maintenance of electrical equipment, including the quality control inspection function.

The NRC will review the electrical maintenance program after:

- . The licensee determines the adequacy of the electrical equipment maintenance program,
- . The licensee conducts quality control inspections, if required,
- . The licensee determines L. K. Comstock's responsibility in assuring maintenance of electrical equipment.

Pending these licensee actions and NRC review, the electrical equipment maintenance program will remain unresolved (456/84-13-04; 457/84-13-04).

No items of noncompliance or deviations were identified.

5. Spent Fuel Storage Racks

The contractor that fabricated the 6x5 and 6x6 spent fuel storage racks was NUS Corporation. The inspector reviewed Specification F/L-2743, New And Spent Fuel Storage Racks dated January 7, 1976 through Amendment 2 dated June 28, 1983, and NUS Corporation Specification 5106-M-200 Revision C, which was approved by Sargent and Lundy on January 13, 1978. These two documents established the fabrication requirements for the storage racks. The following drawings delineated the dimensional requirements and weld details:

- . 5106M 2000 Revision 2
- . 5106M 2001 Revision 7
- . 5106M 2002 Revision 8

After reviewing these drawings, a 6x5 rack and a 6x6 rack were examined for conformance to the drawings requirements, including:

- . Width and length dimensions
- . Component dimensions - (shear plates, collar bars, corner support plates, module support plates, support beams, and gusset plates)
- . Separation dimensions
- . Structural welds - (gusset plate to beam welds, plate to beam welds, gusset plate to support plate welds, collar bar to support plate welds, and shear plate welds)

One rack's flare plates at the end of the alignment box were damaged and one rack's support beams, (quantity of two), were deformed. The inspector identified these racks to the licensee and the licensee documented these conditions for resolution. Pending licensee evaluation and corrective action if necessary, and NRC review, the acceptance of these two spent fuel storage racks will remain unresolved (456/84-13-05; 457/84-13-05).

It was noted that the welds attaching the 79" long collar bar to the 3" x 83" support plate were not symmetrical. The pieces were connected by 9" long welds on the ends, and 3" long intermittent welds with centers

ranging from 5 1/2" to 8 1/2". The inspector was unable to identify this particular weld detail on the drawings to determine weld acceptability. Pending this information being supplied to NRC and subsequent review, this weld detail will remain an open item (456/84-13-06; 457/84-13-06).

The fabrication documentation was reviewed and the inspector identified the following items, which the licensee is presently investigating and evaluating for resolution:

- . welding procedure qualifications as required by specification F/L-2743, identified as being used for specific welds or components, were not available for review.
- . welder qualifications as required by specification F/L-2743, were not available for review.
- . penetrant material test reports, as required by specification 5106-M-200, were not available for review.
- . NUS Visual Weld Inspection Procedure 763, Revision 1, was not available for review.
- . the majority of the visual weld inspection records for the root and completed welds, as required by specification 5106-M-200, were not available for review.
- . joint preparation inspection records for dimensional and cleanliness conformance, as required by specification 5106-M-200, were not available for review.
- . surface roughness and interior edge inspection records, as required by specification 5106-M-200, were not available for review.
- . penetrant test reports did not identify the specific components penetrant tested, nor if both the applicable root and final passes were inspected, as required by NUS Procedure 761, Revision 5, and specification 5106-M-200.
- . the inspector was unable to trace the certified material test reports for the collar bars, as required by specification 5106-M-200, for the majority of the storage rack assemblies.
- . The inspector was unable to trace the certified material test reports for the welding materials to the specific joints or components, as required by specifications 5106-M-200 and F/L-2743.
- . Penetrant Test Report, dated March 22, 1979, shop order #3913, was not traceable to a spent fuel storage rack assembly serial number.

The licensee stated that they believe adequate documentation does exist, but it may not be filed on site. Pending licensee investigation and submittal of additional documentation to the NRC at the Braidwood site for

review, documentation acceptability for the spent fuel storage racks will remain an unresolved issue (456/84-13-07; 457/84-13-07).

No items of noncompliance or deviations were identified.

6. Pipe Supports

Twenty pipe supports were examined for conformance with the drawing requirements. Attributes checked included:

- . Configuration
- . Weld details
- . Dimensional tolerances and offset gaps
- . Location
- . Correct components

Identified below are the installed component supports which were examined, the type of support, location, and if applicable, an engineering change notice (ECN), which revised the installation:

<u>Support</u>	<u>Type</u>	<u>Location</u>	<u>ECN No.</u>
M-1SX09044X	sway-strut	containment #1	16559
M-1SX08038X	rigid	containment #1	12196
M-1CV05020R	rigid	containment #1	
M-1CV05022X	sway-strut	containment #1	
M-1CV05027R	rigid	containment #1	
M-1CV05021X	sway-strut	containment #1	
M-1CV05099X	sway-strut	containment #1	
M-1CV05023R	sway-strut	containment #1	
M-1CV05024R	sway-strut	containment #1	
M-1CV05025X	sway-strut	containment #1	
M-1CV05026R	rigid	containment #1	
M-1CV54004X	sway-strut	auxiliary building	
M-1CV54005R	rigid	auxiliary building	
M-1CV01028X	rigid	auxiliary building	
M-1CC03073R	rigid	auxiliary building	
M-1CC03136R	sway-strut	auxiliary building	
M-1CC03150X	sway-strut	auxiliary building	15907
M-1CV54001R	rigid	auxiliary building	
M-1CV54003X	sway-strut	auxiliary building	
M-1CC02136X	sway-strut	auxiliary building	

No items of noncompliance or deviations were identified.

7. Procurement

Procurement documents specifying material for the electrical discipline were checked for technical adequacy, QA program requirements, 10 CFR 21 provisions, identification of items, and if the supplier was on the approved bidders list. In addition, Commonwealth Edison material receipt

inspection reports and documentation, such as certified material test reports and certificates of conformance, were reviewed for conformance to the procurement documents. The following purchase orders and their associated receipt inspection documentation were examined:

<u>Purchase Order No.</u>	<u>Vendor</u>	<u>Product Type</u>
728208	Northern Ill. Steel	ASTM A36 plate
249282	Northern Ill. Steel	ASTM A36 plate
266483	Haggerty Steel	Structural Steel
259707	Haggerty Steel	Tube Steel, Plate
256493	Haggerty Steel	Tube Steel, Plate
252162	Raychem Corp.	Heat Shrink Tubing
254434	Raychem Corp.	Heat Shrink Tubing
259782	Raychem Corp.	Heat Shrink Tubing
262155	Raychem Corp.	Heat Shrink Tubing
265347	Raychem Corp.	Heat Shrink Tubing
270934	Raychem Corp.	Heat Shrink Tubing
276436	Raychem Corp.	Heat Shrink Tubing
256523	Raychem Corp.	Heat Shrink Tubing
272787	Raychem Corp.	Heat Shrink Tubing

The procurement documents and receipt inspection records were in accordance with regulatory requirements with the exception of six orders placed with Raychem Corporation. The heat shrinkable tubing was ordered under the requirement that documentation shall include a certificate of compliance certifying that the material had been tested to the requirements of IEEE 383-1974 for aging, radiation, and LOCA environment, as stipulated by Sargent and Lundy drawing 20-E-1-3503, dated February 1, 1979, and L.K. Comstock Procedure 4.3.9, Cable Termination Installation, Paragraph 3.11.5 - Lug to Bus Connection, 4160V and 6900V Connections. The certification for aging, radiation, and LOCA environment was received for all the Raychem Corp. purchase orders delineated above. However, Raychem Corp. procurement documents, numbers 252162, 254434, 259782, 262155, 265347, and 270934 did not contain statements that 10 CFR Part 21, "Reporting of Defects And Noncompliance", applied to these heat shrink tubing orders. 10 CFR 21.31 Procurement Documents states: "Each individual, corporation, partnership or other entity subject to the regulations in this part shall assure that each procurement document for a facility, or a basic component issued by him, her or it on or after January 6, 1978 specifies, when applicable, that the provisions of 10 CFR Part 21 apply."

Detailed below are the procurement documents and their date of placement:

<u>Procurement Document No.</u>	<u>Date of Placement</u>
252162	02/02/81
254434	08/03/81
259782	01/22/82
262155	04/14/82
265347	06/23/82
270934	11/22/82

Failure to specify the application of 10 CFR Part 21 to these procurement documents is a violation of 10 CFR 21.31 (456/84-13-08; 457/84-13-08).

8. Cable Pan Supports

The structural supports for ten cable pans located in the auxiliary building were examined for conformance to the drawings, including configuration, dimensions, and welding details. Detailed below are the cable pans and their applicable supports:

<u>Cable Pan</u>	<u>Support I.D.</u>	<u>Type</u>
21752J	H-181, H-189	unistrut
21750J	H-188	unistrut/braced
21747J	H-185, H-186, H-187	unistrut/H-186 braced
21746J	H-183, H-184, H-185	unistrut/H-183 braced
21779J	H-160	tube steel
21777J	H-170, H-171	unistrut
21772J	H-137, H-138	tube steel/H-137 braced
21773J	H-175	unistrut
21764J	H-142	unistrut
21765J	H-140	unistrut/braced

Documents utilized in the examinations included:

- . Sargent and Lundy drawings 20E-0-360 series and 20E-0-380 series for welding details.
- . Sargent and Lundy drawing 20E-0-3251, Cable Pan General Notes and Installation Details.
- . Sargent and Lundy drawing 20-E-03278 for configuration.
- . Sargent and Lundy Hanger List for dimensional requirements.

Subsequently, the inspector reviewed L. K. Comstock inspection reports for these cable pan installations, and Pittsburgh Testing Laboratory inspection reports that documented a 10% overview weld inspection. Procedures reviewed included L. K. Comstock Procedures 4.8.3, Weld Inspection and 4.3.10, Storage, Issue and Control of Welding Material. Inspection reports were in accordance with procedure requirements and the weld rod was found to be stored in accordance with the procedure requirements, including oven temperature adherence. However, the inspector discovered that weld rod was allowed to be stored overnight in the portable rod oven heaters, instead of being returned to the issue stations. There are approximately one-hundred portable ovens and quality control does not assure that these ovens are plugged in at night and furthermore, surplus weld rod should be returned to the issue stations in order that it may be signed out to a specific

application/component for traceability control. The inspector discussed these points with the licensee and the licensee has decided that all surplus weld rod must be returned to an issue station after the days shift, to facilitate optimum weld rod control. L. K. Comstock was notified of the licensee's decision and therefore, the inspector considers this issue closed.

Over 300 filler metal withdrawal authorization forms, which document the release of weld rod for electrical installations, were reviewed for the months of May 1982 through August 1982. This was the time frame the cable pans were installed. The filler metal authorization forms were specific as to the use of the weld rod, specifying one of the following on each form:

- . conduit hangers
- . cable support
- . cable pan
- . switchgear
- . junction box hangers

However, the forms did not specify the specific component the rod was used on and only listed general building locations, such as Auxiliary Building, elevation 463 feet. Nine filler metal withdrawal authorization forms documented the assignment of E7018 weld rod for cable pan welding, even though Sargent and Lundy drawing 20E-0-3251, Revision AC and L. K. Comstock Procedure 4.3.3, dated January 29, 1982, required the use of E60 Series weld rod for cable pan welds. Detailed below are the nine forms documenting the release of E7018 weld rod, by heat number, for cable pan welding:

<u>Date of Requisition</u>	<u>Area</u>	<u>Heat No.</u>	<u>Designated Class</u>
5/25/82	Auxiliary Bldg., 383'	411P4161	*E6013
5/25/82	Auxiliary Bldg.	411P4161	*E6013
5/26/82	Auxiliary Bldg.	411P4161	*E6013
6/9/82	Auxiliary Bldg., 383'	411P4161	*E6013
6/10/82	Containment #1, 426'	411P4161	E7018
6/11/82	Auxiliary Bldg., 426'	421P4461	E7018
6/22/82	Auxiliary Bldg., 426'	402S9011	E7018
7/13/82	Auxiliary Bldg., 463'	402S9011	*E6013
7/28/82	Auxiliary Bldg., 439'	402S9011	E7018

*Heat numbers 411P4161 and 402S9011 were actually E7018 weld rod as the inspector reviewed the material certifications. The rod issue attendants apparently thought these heats of rod were E6013. Note that the same heats, 411P4161 and 402S9011, were handed out as both E6013 and E7018 weld rod.

Failure to control the use of weld rod for cable pan welding is a violation of 10 CFR 50, Appendix B, Criterion IX (456/84-13-09; 457/84-13-09).

9. Audits

Commonwealth Edison recent site audits were reviewed. Past NRC inspection findings identified deficiencies in the Braidwood Site audit program with regard to depth of audits and corrective action. The recent audits revealed significant improvement in audit technique, depth, identification of problem areas, corrective action, and actions to prevent recurrence. The audits met the regulatory requirements and were carried out with the purpose of identifying and correcting any deficiencies that could affect the safe operation of the plant. The audits reviewed and area covered are detailed below:

<u>Audit Dates</u>	<u>Area</u>	<u>Discipline</u>
6/11/84-6/16/84	Calibration, Measuring and Test Equipment	HVAC
	Storage	HVAC
	QC Inspections	HVAC
	Welding/Weld Rod Control	HVAC
4/17/84-4/27/84	Receiving and Material Control	Piping
	Storage	Piping
	Housekeeping	Piping
	Corrective Action	Piping
	Small Bore Pipe	Piping
	Piping/Support Layout	Piping
	Support Installation	Piping
	Material Traceability	Piping
4/16/84-4/23/84	Identification and Control of Equipment and Components	Electrical
	QC Inspector Qualifications	Electrical
	Welding/Weld Rod Control	Electrical
	Re-inspection Program	Electrical

The audits included both documentation (software) and installation (hardware) inspections.

No items of noncompliance or deviations were identified.

10. Inspection of Reactor Coolant Pump Supports

The inspector reviewed Sargent and Lundy design drawings No. S1107, S1109 "Reactor Coolant Pump Support" Plan Elevation 393'2" and Teledyne Brown Engineering Drawing No. 22287 "Byron/Braidwood Station N.S.S.S. Support Framing Reactor Coolant Pump Lateral Support Erection" and noted discrepancies between the as-built condition and the designed lateral support. This lateral support modification affected just reactor coolant pump number 2 in units one and two. The inspector requested documentation to substantiate the nonconformance which resulted in the modification, the

Engineering Change Notice, the Design Change review and approval, material specifications, qualified welding procedures, Quality Control records and inspections, and welder qualifications. Additionally, the inspector will determine if this modification was also installed on the Byron reactor coolant pumps. This matter is considered an unresolved item and will be reviewed during future inspections (50-456/84-13-10; 50-457/84-13-10).

11. Open Items

Open items are matters which have been discussed with the licensee, which will be reviewed further 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 4 and 5.

12. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. Unresolved items disclosed during the inspection are discussed in Paragraphs 4, 5 and 10.

13. Exit Interview

The inspector met with licensee representatives (denoted under Persons Contacted) during and at the conclusion of the inspection on July 6, 1984. The inspector summarized the scope and findings of the inspection. The licensee acknowledged the information.