LIST OF VARIOUS Inspection Rept. IN 75

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DATE	FROM	TO	TYPE	SUBJECT
5/21/75	IV		Insp. 50-285/75-06	Omaha
5/16/75	Re III		Insp. 50-266/75-07 50-301/75-05	
5/15/75	Region V		Inspection Rpt. #50-133/75-03 - Pacific Gas & Electric Co.	
5/6/75	" "		Inspection Rpt. #50-312/75-04 - Sacramento Municipal Utility District	
5/1/75	" "		Inspection Rpt. #50-206/75-03 - Southern California Edison Company	
5/9/75	Region IV		Inspection Rpt. #50-267/75-04 - Public Service Co. of Colorado	
5/28/75	" "		Inspection Rpt. #50-298/75-07 - Nebraska Public Power District	
5/15/75	Region III		Inspection Rpt. #050-315/75-07 - American Electric Power Serv. Corp.	
5/27/75	" "		Inspection Rpt. #050-010/75-09 #050-237/75-14 #050-249/75-12 Commonwealth Edison Co., & Dresden Nuclear Power Station	
5/19/75	" "		Inspection Rpt. #050-155/75-06 - Consumers Power Co. & Big Rock Point Nuclear Plant	
5/27/75	" "		Inspection Rpt. #050-331/75-05 - Iowa Electric Light & Power Co. & Duane Arnold Energy Center	
5/16/75	" "		Inspection Rpt. #050-255/75-09 - Consumers Power Co., & Palisades Nuclear Generating Plant	
5/8/75	" "		Inspection Rpt. #050-263/75-08 - Northern States Power Co., & Monticello Nuclear Generating Plant	
5/21/75	" "		Inspection Rpt. #050-305/75-07 - Wisconsin Public Serv. Corp. & Kewaunee Nuclear Power Plant	
5/28/75	" "		Inspection Rpt. #050-254/75-09 - Commonwealth Edison Co., & Quad-Cities Nuclear Power Station	

DATE	FROM	TO	TYPE	SUBJECT
5/22/75	Region I		IE Inspection Rpt.	#50-03/75-02 - Consolidated Edison of New York Indian Point 1
5/20/75	" "		IE Inspection Rpt.	#50-213/75-04 - Connecticut Yankee Atomic Power Company
5/16/75	" "		IE Inspection Rpt.	#50-317/75-11 - Baltimore Gas & Electric Company
5/16/75	" "		IE Inspection Rpt.	#50-244/75-07 - Rochester Gas & Electric Corporation
5/16/75	" "		IE Inspection Rpt.	#50-333/75-07 - Niagara Mohawk Power Corporation
5/14/75	" "		IE Inspection Rpt.	#50-277/75-08 and 50-278/75-11 - Philadelphia Electric Company
5/20/75	" "		IE Inspection Rpt.	#50-219/75-13 - Jersey Central Power and Light Co.
5/19/75	" "		IE Inspection Rpt.	#50-220/75-06 - Niagara Mohawk Power Corporation
5/13/75	" "		IE Inspection Rpt.	#50-245/75-09 - Northeast Nuclear Energy Company
5/22/75	" "		IE Inspection Rpt.	#50-309/75-07 - Maine Yankee Atomic Power Company
5/22/75	" "		IE Inspection Rpt.	#50-247/75-06 - Consolidated Edison Company Indian Point 2
5/12/75	" "		IE Inspection Rpt.	#75-11 - Boston Edison Company Pilgrim Nuclear Power Station
5/19/75	" "		IE Inspection Rpt	#50-271/75-03 - Vermont Yankee Nuclear Power Corp.
M15 5/19/75	" "		IE Inspection Rpt	#50-29/75-05 - Yankee Atomic Electric Company
5/22/75	" "		IE Inspection Rpt	#50-289/75-10 - Metropolitan Edison Company, Middletown, Pa., 3 Mile Island 1

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DATE	FROM	TO	TYPE	SUBJECT
5/7/75	Region III		IE Inspection Rpt.	#050-295/75-04 and #050-304/75-03 Commonwealth Edison Company & Zion Nuclear Pwr Station, Units 1 & 2
8/2/75	" "		IE Inspection Rpt	#050-282/75-06 and #050-306/75-04 Northern States Power Company & Prairie Island Nuclear Generating Plant
5/7/75	" "		IE Inspection Rpt	#050-409/75-04 - Dairyland Power Cooperative and LaCrosse Boiling Water Reactor
9/17/75	" "		IE Inspection Rpt	#050-331/75-11 - Iowa Electric Light & Power Company
5/28/75	" "		IE Inspection Rpt	#50-321/75-6 - Georgia Power Co.
5/28/75	" "		IE Inspection Rpt	#50-324/75-06 - Carolina Power & Light Company
Missing — 5/13/75	Region II		IE Inspection Rpt.	#50-269/75-6, 50-270/75-7 and 50-287/75-7 Duke Power Company Oconee Units 1, 2 and 3
5/22/75	" "		IE Inspection Rpt	#50-261/75-8 - Carolina Power & Light Co. - H.B. Robinson 2
5/21/75	" "		IE Inspection Rpt	#50-250/75-7 - Florida Power & Light Company Turkey Point 3 & 4
5/19/75	" "		IE Inspection Rpt	#50-280/75-7 and 50-281/75-6 Virginia Electric & Power Co. Surry Power Station
9/12/75	" "		IE Inspection Rpt	#50-259/75-11 - Tennessee Valley Authority, Browns Ferry Unit 1

DATE	FROM	TO	TYPE	SUBJECT
5/21/75	G.L. Madsen	T.E. Short	Ltr	
6/30/75 - J.M. PLANT	E.M. Howard	Ltr		
5/29/75	N.C. Moseley	R.E. Uhrig	Ltr	
6/22/75	E.E. Utley	N.C. Mosley	Ltr	
6/30/75 5/29/75	G.L. Madsen	J.M. Pilant	Ltr	
7/22/75	G.L. Madsen	C.K. Millen	Ltr	
7/22/75 6/5/75	N.C. Moseley	J.A. Jones	Ltr	
7/11/75	C.K. Millen	E.M. Howard	Ltr	
6/19/75	G.L. Madsen	C.K. Millen	Ltr	
7/18/75	G. Fiorelli	B. Lee, Jr	Ltr	
8/7/75	J.P. O'Reilly	L.D. White	Ltr	
8/20/75	G. Fiorelli	L. Wachter	Ltr	
8/27/75	J.G. Davis	C.K. Millen	Ltr	
8/29/75	R.T. Carlson	G. Carl Andognini	Ltr	
8/29/75	G. Fiorelli	B. Lee	Ltr	
9/2-5/75	--	--	Rancho Seco Inspection Rpt. #50-312/75-08	
9/8/75	J.p. O'Reilly	Leon D. White	Ref ltr dtd 8/29/75 in Resp to ltr dtd 8/7/75	

* Some Ltrs included are not listed

U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
REGION IV

IE Inspection Report No. 50-285/75-06 | Docket No. 50-285

Licensee: Omaha Public Power District
1623 Harney Street
Omaha, Nebraska 68102

License No. DPR-40

Category B 2

Facility: Fort Calhoun Station, Unit 1

Location: Washington County, Nebraska

Type of Licensee: CE, PWR, 1420 MW(t)

Type of Inspection: Routine, Announced

Dates of Inspection: May 7-9, 1975

Dates of Previous Inspection: April 17, 1975 (Materials)

Principal Inspector: R. Smith for 5-21-75
M. W. Dickerson, Reactor Inspector — Date

Accompanying Personnel: R. Smith 5-21-75
R. Smith, Reactor Inspector — Date

Reviewed By: G. L. Madsen 5-21-25
G. L. Madsen, Chief, Reactor Construction and Operations Branch — Date

SUMMARY OF FINDINGS

Enforcement Action

A. Items of Noncompliance

1. Violations

None

2. Infractions

a. Contrary to the requirement of Technical Specification 2.0, Table 2-1, item 5, Limiting Condition for Operation, the SIRW Low Level Switches were found to have drifted upwards in excess of the TS limits.

This infraction was identified by the licensee. (DETAILS, paragraph 4.b)

b. Contrary to the requirements of Technical Specification 2.3.(1)a, the required minimum SIRW tank storage was less than the required 283,000 gallons.

This infraction was identified by the licensee. (DETAILS, paragraph 4.b)

3. Deficiencies

None

B. Deviations

None

Licensee Action on Previously Identified Enforcement Matters

A. Infractions

1. Failure to Comply with QAP 10.02, "Nonconformity Control and Correction"

In compliance with QAP 10.02, a Material/Equipment Nonconformity Report (NR) No. 6-75, was processed and approved on 4/29/75. In addition, procedure change 75A340 to SP-NER-1, "New Fuel Receipt", requiring submittal of an NR in accordance with QAP 10.02 for fuel assemblies not meeting specifications, was approved on 4/5/75. This matter is considered closed. (DETAILS, paragraph 5)

(continued)

2. Failure to Comply with Tool Accountability and Control Requirements

An individual is now assigned to patrol the refueling area and assure that all loose equipment and materials taken into the refueling area are properly secured. The individual was initially assigned at the time this deficiency was brought to the attention of the licensee by the inspector. This matter is considered resolved. (DETAILS, paragraph 6)

3. Fuel Movement Sequence Sheets not Signed

Procedure Change 75A-277, dated 3/21/75, to refueling procedure SP-CR-1 deleted the requirement for the operator sign-off at the bottom of each page of Appendix A. This matter is considered resolved. (DETAILS, paragraph 7)

New Unresolved Items

75-6/1 - Inspection of Structural or Seismic Support Bolts on Class I Components (IEB 74-3)

The IEB 74-3 information submitted by OPPD on 4/24/75 to NRC was determined to be incomplete and partially incorrect. OPPD is to submit a supplement to the 4/24/75 reply. (DETAILS, paragraph 9)

75-6/2 - Leaking of Tendon Grease

Tendon grease was observed to be leaking at the juncture of the seal between the containment and the auxiliary building. Pools of liquid from this material were observed adjacent to penetrations C-7 and D-7 representing a possible fire hazard. The licensee indicated that an investigation of methods for elimination of the potential fire hazard would be conducted. (DETAILS, paragraph 10.b)

75-6/3 - Cable Tray Slots

Several of the Cable Tray Slots within the auxiliary building did not appear to be completely sealed with fiberglass. (DETAILS, paragraph 10.b)

75-6/4 - Failure of Component Cooling Water Valves to Close (AO 75-11)

During an Engineered Safeguards Activation Test, the component cooling water valves to the Containment Air Cooling and Filtering Unit VA-1B, failed to operate properly because of a high flow controller setting. A means of locking the flow controller set point is being investigated. (DETAILS, paragraph 4.g)

(continued)

Design Changes

Installation of design change 75A-45 was completed on 5/3/75 for the installation of secondary pressure interlocks on cooling valves HCV-347 and 348 to inhibit their opening. This change to the PSAR requirements is in the process of being submitted to Licensing for their review. (DETAILS, paragraph 11.c)

Abnormal Occurrences

AO 75-05

On March 11, 1975, during performance of surveillance test ST-ESF-7, F.3, it was discovered that the SIRW Tank Level pressure switch settings for the Recirculation Actuation Signal had drifted upward in excess of the allowed TS limit. In addition, the SIRW Tank Volume of water was below the required TS minimum requirement. (DETAILS, paragraph 4.b)

AO 75-07

On March 13, 1975, main transformer T1 tripped on an indicated internal fault. Both diesel generators' auto started and came to rated speed and voltage. Diesel Generator #2 breaker 1AD2 auto closed on bus 1A4, however, Diesel Generator 1AD1 failed to auto close on bus 1A3. (DETAILS, paragraph 4.c)

AO 75-08

On March 12, 1975, High Pressure Safety Injection Valve, HCV-311, failed to open on a signal from the control room. (DETAILS, paragraph 4.d)

AO 75-09

On March 31, 1975, during performance of surveillance test ST-RWS-1, raw water backup valves HCV-401E and HCV-2808D failed to operate. (DETAILS, paragraph 4.e)

AO 75-10

On April 3, 1975, during performance of surveillance test ST-ESF-2, charging pump, CH-1C and containment ventilation fan, VA-7C, failed to sequentially start from the backup sequence. (DETAILS, paragraph 4.f)

AO 75-11

On April 4, 1975, during performance of surveillance test ST-ESF-2, section F.3 and F.4, inlet and outlet valves HCV-401A and HCV-401C to containment cooling and filterning unit VA-1B failed to operate properly. (DETAILS, paragraph 4.g)

(continued)

Other Significant Findings:

During the inspection the reactor was determined to be at twenty percent power with approximately ten percent load on the generator. Post refueling low power physics testing had been completed and power ascension testing was in progress.

Management Interview

On May 9, 1975, a meeting was held with OPPD management to identify the scope of the inspection and to summarize the findings of the inspection. the following individuals were in attendance:

Omaha Public Power District (OPPD)

T. E. Short, Manager Production Operations
W. C. Jones, Operations Manager
F. A. Thurtell, Manager Quality Assurance
W. D. Dermyer, Plant Supervisor

The inspector described the scope of the inspection and the findings. The significant items discussed are given below:

A. New Apparent Item of Noncompliance

The infraction for exceeding the TS limits of Table 2-1, item 5, on the SIRW Low Level Switches and not meeting TS 2.3(1)a, requirements relative to minimum volume (AO 75-05).

B. Corrective Action for Previously Identified Matters or other Inspection Items that Require Followup

1. Failure to comply with QAP 10.02 "Nonconformity Control and Correction".

2. Failure to comply with tool accountability and control requirements.

3. Fuel movement sheets not signed.

4. ROB 74-3 - Inspection of Structural or Seismic Support Bolts on Class I Components.

5. ROB 75-04A - Cable Fire at Browns Ferry.

6. AO 74-18 - Failure of STS Relay 86-OR/1AD1.

7. AO 75-03 - Failure of STS Relay 86-OR/1AD1.

8. AO 75-07 - Diesel Generator Breaker 1AD1 Failure to Auto Close on Bus 1A3.

(continued)

9. AO 75-08 - High Pressure Safety Injection Valve, HCV-311 Failure to Open.

10. AO 75-09 - Raw Water Backup Valves HCV-401E and HCV-2808D Failure to Operate.

11. AO 75-10 - Failure of Backup Sequencer.

12. AO 75-11 - Failure of Component Cooling Valves HCV-401A and HCV-401C to Operate Properly.

13. Leaking of tendon grease.

14. SARC and PRC review of TS changes.

(continued)

DETAILS

Prepared by M. W. Dickerson and R. Smith, Jr.

1. Persons Contacted

The following individuals, in addition to those listed under the Management Interview section of this report, were contacted during the inspection.

Omaha Public Power District (OPPD)

R. L. Andrews, Plant Operations Supervisor
S. C. Stevens, Technical Supervisor
S. M. Moyer, Plant Maintenance Supervisor
Dr. R. L. Jaworski, Reactor Engineer
J. E. Bentzenger, Engineer-Quality Assurance
J. M. Nagl, Electrical Engineer
N. L. Marfice, Instrument & Control & Electrical Field Maintenance Engineer
J. J. Fisicaro, Assistant to Plant Supervisor
J. C. Riley, Shift Supervisor
R. C. DeMeulmeester, Shift Supervisor
R. F. Johnston, Shift Supervisor
J. L. Connolley, Test Engineer

2. General

The purpose of this routine announced inspection was to review the corrective actions for previously identified matters; items reported by the licensee; reactor startup operations; action on reactor operations bulletins; maintenance activities during shutdown; and an inspection relative to fire stops for electrical cables and penetrations.

3. Post Refueling Startup Testing

The inspector examined procedures and associated test data to verify that post refueling startup testing was conducted in accordance with requirements.

Procedures and data relating to the following were reviewed:

a. Control Element Assembly position checks.

b. Boron reactivity worth.

c. Measurement of temperature coefficient of reactivity worth.

d. Minimum shutdown boron concentration with a control element assembly completely withdrawn from the reactor core.

(continued)

e. Control Element Assembly worth for each bank.

f. Checkout of the recently installed variable over power trip circuitry.

g. Partial power ascension testing.

Completion of this review will be performed during a future inspection.

The post refueling testing procedures were reviewed for adequate definition of scope, objective, prerequisites, precautions, limitations, acceptance criteria, checkoff lists, deficiency control and resolution, valve lineups, plant conditions, and proper approvals. No deficiencies were identified by the inspector.

4. Abnormal Occurrence Reports (AOR's)

Abnormal Occurrence 74-18, 75-03, 75-05 and 75-07 through 75-11 were reviewed during this inspection. The details of each are summarized in the following paragraphs. The inspector's effort was directed at verification that:

a. the details of the event were clearly reported in the 10-day letter;

b. the cause was clearly identified;

c. the corrective action indicated had been completed; and

d. the event and indicated corrective action was reviewed and evaluated in accordance with the Technical Specification.

No discrepancies were noted. However, AOR 75-05 does constitute a deficiency since the recirculation actuation set point had drifted upward in excess of the TS requirement. Corrective measures have been taken by the licensee as described below.

a. AO 74-18 and AO 75-03 - Failure of Diesel Generator Breaker Override to Operate 1/

The two Abnormal Occurrences reported by the licensee are similar since both resulted, during Surveillance Test ST-ESF-2 (Safety Injection Activation), in the failure of lockout relay 86-OR/1AD1 to trip. As reported by the licensee, AO 75-03 is the fourth occurrence of a relay failing to operate due to wire lug interferences. To prevent repetition of this occurrence the licensee has completed a permanent fix which would eliminate the wire lug interference problem as follows:

(1) Removal of the relay covers and cut off all but the last 3-3/4" of the cover which protects the coil. Arrangement of the relay

(continued)

1/ IE Inspection Report No. 50-285/75-01, Details 1, paragraph 8

wiring to assure sufficient contact clearance and installation of the covers over the coils.

(2) To prevent dust and other foreign material from falling into the relay contacts, installation of a 1/8" Micarta panel above the top rows of relays. This panel was placed between the top of the relays and the bottom of the amber status lights.

(3) To prevent dust from collecting on the relay contacts, air filters were installed on the louvered panel doors which are intended to remove all particles larger than two microns in diameter.

This matter is considered closed.

b. AO 75-05 - Recirculation Actuation Signal Set Point Drift

During review of SIRW Tank Level Channel Calibration ST-ESF-7, F.3 it was discovered that the as found pressure switch settings for the Recirculation Actuation Signal had drifted upward in excess of the Technical Specification section 2.0 setting specified in Table 2-1, Item 5. This set point is 16" + 0" - 2" and initiates Safety Injection Recirculation. In addition, the level being maintained in the SIRW Tank was found to be approximately 15,000 gallons below the requirements of Technical Specification section 2.3(1)a which requires a minimum level of 283,000 gallons of water in the SIRW Tank.

The inspector determined that calibration procedures have been changed to provide low level and high level alarm set points of the SIRW Tank to 185 inches and 193 inches respectively. This low level alarm alerts the control room operator when the level decreases to approximately 296,000 gallons. The calibration procedures were also changed to calibrate the Safety Injection recirculation set point to 16" + 0" -2".

The calibration set point was previously set at 16" ± 0.2" which is 0.2 inches above the Technical Specification limits. A design change has been prepared to install switches with a lower pressure setting in the safety injection recirculation control circuitry. The pressure switches have not been installed. This AOR remains open.

These infractions were identified by the licensee and were reported in a timely manner. Corrective action has been taken. No additional information is needed for these items of noncompliance at this time.

c. AO 75-07 - Failure of Diesel Breaker 1AD1 to Close on Dead Bus During Loss of Off-Site AC Power

At 0031 hours on March 13, 1975, main transformer T1 tripped on an indicated internal fault. Both diesel generators' auto started and

(continued)

came to rated speed and voltage due to loss of voltage on 4160 volt buses 1A3 and 1A4. Diesel Generator #2 breaker 1AD2 auto closed on bus 1A4; however, Diesel Generator breaker 1AD1 failed to auto close on bus 1A3. The operator then manually closed breaker 1AD1 by control switch. This occurrence was caused by the failure of the operator to trip SI-1A breaker.

Operating personnel were briefed by the Operations Supervisor on the operator action required during loss of off-site AC power. It was brought to their attention that Emergency Procedure #3 documents the action required by the operator during loss of off-site AC power.

This matter is considered closed.

d. AO 75-08 - Failure of High Pressure Safety Injection Valve HCV-311 to Open on a Signal from the Control Room.

The High Pressure Safety Injection Valve HCV-311 failed to open on control switch command from the control room. The reversing interlock at the combination breaker/starter for HCV-311 was not making proper contact. Also, a normally open contact had been installed instead of a normally closed contact. Preventative maintenance had been performed on this breaker/starter prior to this occurrence and the breaker/starter was improperly reassembled. The interlock was reassembled and manually actuated to verify operability. HCV-311 was then electrically operated by control switch from full open to full close to full open twice. The valve, its combination breaker/starter, and the reversing interlock operated properly.

This matter is considered closed.

e. AO 75-09 - Failure of Raw Water Backup Valves HCV-401E and HCV-2808D to Operate

During performance of Surveillance Test ST-RWS-1, raw water backup valves HCV-401E (raw water supply to VA-1B) and HCV-2808D (raw water return from SI-2A) failed to operate on signal from the control room. The failure of HCV-401E to operate was attributed to dirt in the valve positioner. HCV-2808D failed due to a solenoid which had failed to operate.

The pneumatic relay orifices on the positioner of HCV-401E were cleaned and the valve was retested satisfactorily. The solenoid was replaced on HCV-2808D and the valve was retested satisfactorily.

This matter is considered closed.

f. AO 75-10 - Failure of Backup Sequencer to Actuate Auxiliary Relay.

Charging pump, CH-1C, and containment ventilation fan, VA-7C, failed to sequentially start from the backup sequencer (S1-2 and 52-2)

(continued)

during Surveillance Test ESF-2. A test and inspection of the relay logic chain revealed that the contact from the timing relay which energizes the auxiliary relay was contaminated. The relay contacts were burnished and the logic chain successfully tested. CH-1C and VA-7C backup sequencer relays were activated by simulating a pressurizer pressure low signal, timed out properly and did start the charging pump and containment fan.

This matter is considered closed.

g. AO 75-11 - Failure of Component Cooling Water Valves to Containment Air Cooling and Filtering Unit VA-1B to Operate Properly

During the performance of Engineered Safeguards Actuation Test ST-ESF-2, Sections F.3 and F.4, Inlet and Outlet Valves HCV-401A and HCV-401C to Containment Cooling and Filtering Unit VA-1B opened under CIAS signal then reclosed after a fifteen second time delay. HCV-401A and HCV-401C could not be reopened by the control switch with the CIAS signal present even though a flow of approximately 1500 gpm had been established.

The actuation set point on FC-417A was found to be set high so that normal flow could not actuate it. The set point was changed to its proper operating point and the valves were tested to prove proper operation under a CIAS signal.

A means of locking alarm settings with a screw is being instigated by the licensee.

This matter will remain open.

5. Failure to Comply with QAP 10.02, "Nonconformity Control and Correction" 2/

Following the inspection of March 4-7, 1975, material/equipment nonconformance report (NR) No. 6-75 was initiated on 3/21/75, and was completed on 4/29/75. The NR includes a letter from Combustion Engineering which confirmes the acceptability of fuel elements B009 and OD031 for use as is. In addition, procedure change 75A-340 to SP-NFR-1, "New Fuel Receipt", was approved by the PRC on 4/5/75. The change added step X.B.4 which requires that the Reactor Engineer submit an NR in accordance with QA procedure 10.02, for fuel assemblies not meeting specification.

This matter is considered resolved.

6. Failure to Comply with Tool Accountability and Control Requirements 3/

To assure that conformance is maintained with the requirements of Maintenance Procedure MP-RC-1-1 and Core Refueling Procedure SP-CR-1

(continued)

2/ IE Inspection Report No. 50-285/75-01, Details 1, paragraph 3.
3/ IE Inspection Report No. 50-285/75-01, Details 1, paragraph 4.

relative to loose material and equipment in the refueling area, a requirement for patrol of the area has been added. At the time of the previous inspection a health physicist was initially assigned this responsibility when the deficiency was brought to the attention of the licensee. This matter is considered resolved.

7. Fuel Movement Sequence Sheets Not Signed 4/

Procedure Change 75A-277 to the Core Refueling Procedure SP-CR-1 was approved by the PRC on 3/21/75. The change eliminates from paragraph D.3 of the procedure the requirement for the "Refueling Crew Control Room Operator" to sign and date the bottom of each Fuel Movement Sequence Sheet. The procedure still requires the operator to initial the sheet after each sequence in the fuel movement. This matter is considered resolved.

8. SARC Review of Technical Violations and Changes 5/

A review of the SARC Meeting Minutes dated 4/4/75, indicated that the SARC had completed a review of all Technical Specification Change 7. In addition, meeting minutes of the PRC indicated that this committee had also reviewed TS Change 7. This matter is considered closed.

9. IEB 74-03 - Inspection of Structural or Seismic Bolts on Class I Components 6/

The required examination of the steam generator supports and seismic restraints was performed on March 15, 22 and April 5, 1975. A letter summarizing this inspection was transmitted to NRC on April 24, 1975. However, a review of the inspection report, deficiency report No. 0-24-75, dated 4/10/75 and No. 8028, dated 4/12/75, indicated that additional information relative to the inspection findings and status of correction of the deficiencies should have been included in the 4/24/75 letter to the NRC.

All deficiencies except for a reported two missing washers were corrected prior to reactor startup. An engineering evaluation relative to the two washers has not, as yet, been performed.

The licensee is to submit a supplementary reply to IE 74-03 which will include those deficiencies found and the status relative to their correction. This matter remains open.

10. Fire Stops

An inspection relative to the installation of fire stops on electrical cables and penetration seals was performed by the inspector to determine the extent of conformance of the existing installations with design drawings and specifications.

(continued)

4/ IE Inspection Report No. 50-285/75-03, Details, paragraph 2.c.
5/ IE Inspection Report No. 50-285/75-01, Details 11, paragraph 6..
6/ IE Inspection Report No. 50-285/75-01, Details 1, paragraph 14.

a. Drawings and Specifications

The inspector reviewed design drawings and specifications prepared by Gibbs, Hill, Durham and Richardson, Inc., and determined the status of the licensees actions relative to IE Bulletins 75-04 and 75-04A. The specification is contained in detail in contract No. 765, dated 7/69, with Commonwealth Electrical Company. The contract (specification) also references the pertinent drawings which were reviewed by the inspector.

The specification required fire stops for vertical tray runs in excess of ten feet. The method used was required to be reviewed and approved by the engineer. Slots and openings in walls and floors through which cable trays pass and conduit sleeves, slots and openings were also required to be framed and sealed with fiberglass, or other suitable material. The licensee's representatives indicated that only fiberglass had been approved and utilized. The licensee also indicated that no other fire retardant materials were utilized except that fire tape manufactured by Irvington Company was utilized at points within the control room cabinet base as wrapping for individual cables at the floor penetrations.

b. Visual Observation

The areas which were viaually examined by the inspector were: (1) the Cable Spreading Room; (2) portions of the Auxiliary Building, and (3) individual compartment within the Reactor Control Room. Details of the installation appeared to be in conformance with the specification requirements. However, it was noted that several of the wall openings did not appear to be completely sealed with fiberglass. Small openings were observable. It was also noted that tendon grease was leaking at the juncture of the seal between the containment and the auxiliary building. This grease had leaked down and around electrical penetrations C7 and D7 and was forming pools of oil near the penetrations. This finding was also noted in the QA audit discussed in section 10.f of this report. The licensee was informed that these matters would remain as an open item.

c. Fire Protection and Inspections

An extensive fire and smoke detection alarm system was also installed under contract 765. The system utilizes PYR-A-LARM ionization, photoelectric, and thermal detectors in combination with a main control panel in the control room, and remote alarm devices. The area system monitors 32 zones within the containment, auxiliary building and turbine rooms. The main control room panel provides annunciation and will indicate the zone. It also provides an annunciator for failure of power to the system.

(continued)

In conjunction with the detection system Operational Instruction OI-FP-6-1 provides for a weekly fire protection system inspection and test. It includes operational checks of fire pumps, water systems, CO_2 chemical extinguishers, sprinkler systems, hose cabinets and a housekeeping inspection including not needed or unsafely stored volatile or combustible materials.

Emergency procedure EP-10-1 provides for the steps to be taken in the event a fire occurs in or threatens reactor safeguards equipment, reactor protective equipment, or other equipment vital to the safe operation of the plant. This includes, use of the local fire department and a reactor trip according to emergency procedure EP-1.

The existing fire extinguishing system provides:

(1) Sprinkler for the turbine lube oil handling equipement;

(2) Sprinkler for the turbine room basement;

(3) Hose stations for the immediate vicinity outside the entire plant;

(4) Hose cabinets inside the turbine building and the intake structure;

(5) An automatic (heat sensing) deluge system for the main transformers, two auxiliary and two house seismic transformers; and,

(6) Local portable dry chemical and carbon dioxide extinguishers.

e. Present Installation Practices

To determine the present OPPD practices relative to electrical installations, the inspector reviewed two maintenance orders for work performed during the refueling outage.

MO 8182, dated 5/2/75, Installation of Shutdown Cooling Valve Interlock, also discussed in section 11.c of this report, utilized four conductor #10 AWG cable, Cerro Firewall, which was certified by the Cerro Wire and Cable Co., by type test to have exceeded the requirements of a post steam exposure flame resistance test. Minimum post ignition burning was recorded as 23.6 minutes; circuit integrity exceeded 15 minutes and no self sustaining flame was observed. Existing space containment penetrations, cable trays and new conduit were utilized. Fire stops utilized the existing fiberglass where walls and ceilings or floors were penetrated.

MO 7653, dated 3/3/75, Loose Parts Monitoring System, was installed essentially as described above except for the cable utilized. The cable utilized was 2 conductor Raychem-Flametrol (Firewall III) which

(continued)

was certified as exceeding the requirements of IEEE 383. Fire-wall III is composed of 30 mils of flame retardant XLPE insulation covered with 45 mils of flame retardant neoprene.

f. Status of Reply to IE 75-04 and 75-04A

OPPD has indicated that they will complete their review relative to IE Bulletins 75-04 and 75-04A and submit a reply to NRC by July 1, 1975. As part of this review a QA audit was performed on March 19-20, 1975, to examine and evaluate housekeeping, cleanliness practices, and other activities related to fire prevention and protection. As a result, one of the recommendations was to remove the tendon grease from the containment wall and investigate a method of eliminating the source.

11. UE Reports

a. 75A-1 - Charcoal Filter Efficiency

On February 21, 1975, OPPD received, from American Air Filter, verbal results of charcoal efficiency testing for charcoal filter beds. The results confirmed by letter on February 24, 1975, indicated an elemental iodine efficiency of 98.02% and 98.82% from two different lots of charcoal. The indicated efficiencies were less than the 99.5% required by TS 3.6(5)d. This was reported to NRC by letter 2/21/75.

A request to revise the TS acceptance criteria downward to 95% was forwarded to licensing and subsequently approved on 4/30/75.

b. 75A-2 - Deterioration of Secondary Insulation - 4KV Non-Segregated Phase Bus Duct

On March 31, 1975, deterioration of secondary insulation of 4 KV non-segregated phase bus duct was discovered while performing preventative maintenance on the 4KV indoor bus duct. This was reported to NRC by UE Report 75A-2, dated 3/31/75.

Primary insulation of the bus duct is provided by separation of the phases from each other and from gound. The secondary insulation which failed was a red thermo-setting plastic approximately one-tenth inch thick provided by General Electric. The failure appeared to be the result of expansion of the material to a point of cracking.

Corrective action recommended by General Electric has been completed in accordance with MO 7661. The procedure called for removal of insulation except where it was cracked three inches or less, and taping of all bus ducts with No. 202 Irrathane tape and then with No. 70 Scotch Silicone tape. All bus ducts were inspected, repaired and returned to service.

(continued)

c. UE 75-3 - Shutdown Cooling Valve Interlock

On April 15, 1975 OPPD reported to the NRC in UE 75-3 that the secondary inhibit, as described in FSAR section 9.3.2, for valve HCV-348 did not in fact exist. Paragraph 9.3.2 describes a primary and secondary inhibit to prevent opening shutdown cooling valve HCV-349 when the RCS pressure is above 250 psi. The primary inhibit described comprises pressurizer pressure transmitter PT-105 and auxiliary relays in the starting circuits of each valve motor operator. The described secondary inhibit is "a torque switch in the motor operator for valve HCV-347 which will prevent the valve opening if reactor coolant pressure is excessive."

The UE report stated that a secondary pressure sensing interlock for HCV-348, in addition to the existing interlock, would be installed during the refueling outage.

The inspector verified that redundant pressure sensing interlocks had been installed on both HCV-347 and HCV-348. The work was performed in accordance with MO 8182 dated 5/2/75 and approved by the PRC. OPPD is in the process of submitting these changes to Licensing for their review.

UNITED STATES NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report of Operations Inspection

IE Inspection Report No. 050-266/75-07
IE Inspection Report No. 050-301/75-05

Licensee: Wisconsin Electric Power Company
Wisconsin Michigan Power Company
231 West Michigan
Milwaukee, Wisconsin 53203

Point Beach Nuclear Plant
Units 1 and 2
Two Creeks, Wisconsin

License No. DPR-24
License No. DPR-27
Category: C

Type of Licensee: PWR (W)

Type of Inspection: Special, Announced

Dates of Inspection: April 24 and 30, 1975

Dates of Previous Inspection: April 15-17, 1975 (REP)

Principal Inspector: for D. C. Boyd — 5/16/75 (Date)

Accompanying Inspectors: None

Other Accompanying Personnel: None

Reviewed By: E. J. Jordan
Senior Inspector
Reactor Operations Branch — 5/16/75 (Date)

SUMMARY OF FINDINGS

Enforcement Action: None.

Licensee Action on Previously Identified Enforcement Action

Not inspected.

Unusual Occurrences: None inspected.

Other Significant Findings

A. Current Findings

Both plants at essentially full power.

B. Unresolved Items: None.

C. Status of Previously Unidentified Unresolved Items: None.

Management Interview

The management interview was conducted on April 27, 1975, with Mr. Greenwood, Assistant to the Manager, and Ms. Flentje, Office Supervisor.

The items discussed included the following:

A. Construction specifications for electrical penetrations. (Paragraph 3.a through 3.d, Report Details)

B. Results of inspection of electrical penetrations. (Paragraph 3.d, Report Details)

C. Current practices at plant. (Paragraph 4, Report Details)

D. Compliance with final safety analysis report. (Paragraph 5, Report Details)

E. Plant fire protection system. (Paragraph 5.g, Report Details)

F. Licensee response to IE Bulletin No. 75-04 and No. 75-04A. (Paragraph 6, Report Details)

REPORT DETAILS

1. Persons Contacted

Wisconsin Michigan Power Company

G. Reed, Manager, Nuclear Power Division
J. Greenwood, Assistant to the Manager
L. Storz, Shift Supervisor
M. Crouch, Maintenance Supervisor
T. Deddens, Maintenance Superintendent

2. General

Special inspections were conducted on April 24 and 30, 1975, to determine the plant status in regard to the provision of acceptable fire stops and flame retardant seals for electrical penetrations.

The major inspection effort was an inspection tour of the electrical penetrations in the following areas:

- Control room
- Cable spreading room
- Auxiliary equipment and ventilation room (above control room)
- Diesel generator rooms
- Portions of the Turbine building
- Portions of the Auxiliary building

The inspection included review of a representative sampling of completed plant work request and modification request forms, plus discussions with the Assistant Plant Electrical/Maintenance Supervisor, and the Assistant to the Manager.

Also included in this inspection was a sampling comparison of Licensee committments in the Final Safety Analysis Review (FSAR) against the actual conditions now existing at the plant.

3. Penetration Seal Materials

The following materials and specifications utilized in providing the fire-stops, sealing and fire retardant protection for the various electrical penetrations and trays.

a. Fire-Stops

These fire-stops are ½ inch thick sheets of "Marinite Board" manufactured by the Johns-Manville Company. The basic materials are cement and asbestos.

b. Fire-Retardant Materials

Flamemastic 71A manufactured by the Dyna-Therm Corporation. This is a water base material which is non-flamable at all times.

c. Sealant Materials

The sealant materials which are packed in around the electrical cables in the electrical penetrations are all of the inorganic fiber insulation type of material; the primary material used at this plant is an inorganic thermal insulating material manufactured by the Babcock and Wilcox Company bearing the trade name "Koawool". Thus, in summary, none of the materials used in sealing and fire retardant coating of these electrical penetrations are at any time flamable.

d. Penetration Sealant and Flame Retardant Specifications

Detailed penetration sealing, fire retardant application, and fire-stop specifications are provided for ten different types of penetrations. These specifications are provided by Bechtel Company on drawings E-178 and E-179. These specifications were reviewed by the inspector prior to the physical examination of the various electrical penetrations in the plant. Several minor deficiencies were observed as follows:

(1) At several electrical penetration fire stops, the flamemastic 71A fire retardant material was observed to be cracked, apparently due to shrinkage upon drying. This cracking up to ¼ inch in width, did not provide a pressure/smoke seal around the fire-stop.

(2) A diesel generator guarded cooling water line (pipe within a pipe) was not sealed at its exit from the diesel generator room. This is a 30 foot section of 12 inch horizontal pipe. All other lines or openings were sealed or had automatic closure devices.

(3) One penetration, containing only power and control cables for the electro-hydraulic control of the turbine speed control, had only the marinite flame stop. There were no other trays or penetrations within three feet of this penetration.

At the time of this inspection the Licensee was in the process of examining all electrical penetrations in response to IE Bulletins No. 75-04 and No. 75-04A. The licensee reported that they had found one penetration with a missing fire-stop and others that required additional Koawool and/or flamemastic 71A. The inspector observed that these corrective actions were being made using the specifications identified above. The Licensee has stated the intent to correct any deficiencies found, as expeditiously as time and plant conditions allow.

These three deficiencies are not considered as immediately serious by the inspector since they pose no fire propogation threat, but rather a smoke control problem. This plant utilizes a multi-mode ventilation system which is designed to assure that smoke from any other portion of the plant can be prevented from entering the control room or can be swept from the control room if it originates in the control room. As a back-up measure, the inspector observed that there are four self-supporting air breathing masks available in the control room. Emergency procedure E.O.P.10A, control room inaccessibility, provides guidance for a controlled shut-down from outside of the control room, should this unlikely event occur. This capability was demonstrated in a start-up and power ascension test.

4. Current Practices

Discussions with the Assistant Electrical/Maintenance Supervisor, plus a review of plant work request and modification files indicate that disturbing these sealed electrical penetrations to pull in new cable or remove old cable is an infrequent occurrence. Formal procedures or instructions are not issued, however, according to the Licensee, the craftsmen return the penetration to its original status by using the specifications identified in item 1-d above.

The Licensee does not believe that individual penetration seal testing to insure that a total pressure seal exists is necessary for penetrations other than containment boundary penetrations. This position is based on the fact that the various plant ventilation control systems are designed with sufficient independence to permit sweeping of smoke from the various portions of the plant without the smoke being introduced into

the control room. The separate control room ventilation system is designed with the capability to purge any smoke originating in the control room directly to atmosphere, or to operate in a recirculating, filtered mode.[1/] [2/] Thus, the Licensee does not intend to perform individual penetration seal tests. They do intend to adhere to the penetration specifications of item 1-d above, in providing a flame stop, flame retardant, fire barrier type penetration with reasonably tight smoke limiting seal. The inspector's review of these design specifications and the Licensee's final Safety Analysis Report indicates that neither specify that a measurable pressure seal exists, but rather that a "fire barrier" exists. No open flame is used in the testing of seals or penetrations at this plant.

5. Compliance with Final Safety Analysis Report

Other items inspected and compared against committments of the FSAR include the following: (sampling basis only)

a. To restrict the possibility of fire originating in the control room, negligible combustible material, trim or furnishings are used in its construction. All electrical wiring devices are surrounded by or mounted in metal enclosures.

b. In the event a fire does occur in the control room, the operator is supplied with portable respiratory equipment (4) and portable fire extinguishers sized and located in accordance with National Fire Protection Association specifications. The extinguishers carry the Underwriter's Laboratory label of approval, and are suitable for use on electrical fires. The control room, cable spreading and battery rooms contain portable fire extinguishers.

c. To prevent the spread of fire from the electrical rooms beneath the control room, the following provisions are made:

Cables used throughout the cable spreading room have an exterior jacket that meets the IDCEA test requirements,[3/] and cable characteristics meet the following requirements:

1/ Procedure PC-314, operation and testing of control room and cable spreading room ventilation systems.

2/ Operating instruction OI 44, diesel generator room ventilation system.

3/ Cable specification files 6.5.3 & 6.5.4 contains specifications and fire testing of the following: (a) Bechtel Spec for 600V insulation power and control cables for safeguards service (also for 5KV and 15KV insulated power cables), (b) BIW - Bostard cables, (c) Kerite Company 5KV 350 MCM cables.

Where cable trays pass through walls into the electrical equipment and cable spreading rooms, air spaces around the trays are sealed by field-fitted metal trays. Each entering metal tray is provided with a fire stop and is coated with fire retardant material to prevent fire from propagating into these rooms. Cable trays in the cable spreading room are provided with solid bottom and covers, and thermal blankets of Koawool are provided under these metal covers at tray crossover areas.

The electrical equipment rooms, cable spreading room and the electrical switchgear room are ventilated by separate air circulating systems. In the event of a fire in any of these areas, the operator has control of the supply fan from the control room so that the circulating air can be cut off. The presence of fire in a cable spreading room, diesel generator rooms, electrical switchgear room or the electrical equipment room is alarmed in the control room by a product of combustion (smoke) detection system.

f. Power cables for the diesel generators enter in conduits which penetrate the diesel room wall and continue in the electrical equipment room. These wall penetrations are sealed. Each diesel is in a separate room. See item 3.2(2) identification of a possible deficiency in this area.

g. Plant Fire Protection System

The inspector verified that applicable portions of the FSAR Section 9.6.1 fire protection system, are currently functional: 4/ 5/

(1) Control Room Protection -- Observed following:

(a) Two 75 pound CO_2 extinguishers with 50-75 foot hoses and nozzels (one on each side of control room).

(b) One 15 pound CO_2 extinguisher in kitchen.

(c) Two water spray hoses (50-75 feet of hose) located immediately outside each control room door.

(d) Four fresh air (instrument air supply) masks, each with 50 to 75 feet of hose.

4/ Procedure PC-20A - Monthly fire system checks. This fire protection check list identified 77 fire protection devices inside the building and 57 fire protection units outside the building

5/ Note of interest: The company's fire insurance inspector reviews all of these items and the penetration status each 6 months.

(e) Multiple other ANSUL and CO_2 extinguishers immediately available on the turbine hall floor.

(f) A fire annunciator panel for eleven portions of the building.

(2) Cable Spreading Room -- Observed following:

One 100 pound CO_2 cart with 75 foot hose.

(3) Diesel Generator Rooms -- Observed following:

(a) Service water sprinkler system.

(b) 20 pound ANSUL in 3D.

(c) 20 pound ANSUL in 4D.

(d) Smoke detectors and thermal detectors - annunciate in control room and isolate diesel ventilation system.

6. Licensee's Response to IE Bulletin No. 75-04 and 75-04A

The licensee issued a response to these Bulletins on April 8, 1975.

Plant personnel are approximately 90 percent complete with a comprehensive inspection of all safety related electrical penetrations. Deficiencies are being corrected as they are identified. The specifications identified in 1-d above are being used (observed by inspector) No major deficiencies have been identified.

REGION V

IE Inspection Report No. 50-133/75-03

Licensee Pacific Gas & Electric Company
77 Beale Street
San Francisco, California 94106

Docket No. 50-133

License No. DPR-7

Priority

Category C

Facility Humboldt Bay Unit No. 3

Location Eureka, California

Type of Facility BWR (65 MWe)

Type of Inspection Special, Announced

Dates of Inspection May 5-7, 1975

Dates of Previous Inspection March 3-6, 1975

Principal Inspector R. T. Dodds, Reactor Inspector — Date 5/15/75

Accompanying Inspectors None — Date

Date

Other Accompanying Personnel: None

Reviewed by G. S. Spencer, Chief, Reactor Testing & Operations Br. — Date 5/16/75

SUMMARY

Enforcement Action

None

Licensee Action on Previously Identified Enforcement Action

Not applicable

Unusual Occurrences

Not applicable

Current Findings

A. The licensee responded to IE Bulletins Nos. 75-04 and 04A on April 23, 1975. The only actions required will be (1) to expand existing administrative and maintenance procedures and (2) to replace a questionable fire retardant compound (Dow Corning Silicone Compound 732 or 738) used around cabling that was disturbed during the November-December 1974 refueling outage. This work will be accomplished during the June 1975 refueling outage. (Paragraphs 2-6)

B. In general, maintenance procedures were prepared and issued for usage by craft foremen without additional management review and approval. (Paragraph 7)

Management Interview

The results of the inspection were discussed with Messrs. Raymond, Rapp and Voss. The following commitments were proffered by the licensee's representatives.

1. The silicone compound used for a fire barrier will be replaced with the more fire resistant and retardant material Flamistic 71A. (Paragraphs 3 and 4)

2. Operations and maintenance personnel will be specifically advised not to store combustible materials on or adjacent to cable trays. (Paragraph 4)

3. The maintenance procedures will be prepared, reviewed and approved by December 31, 1975 in accordance with the QA program, as described to the Commission in a letter dated January 10, 1975. (Paragraph 7)

DETAILS

1. Persons Contacted

J. Carroll, Supervising Steam Generation Engineer
N. Scherrer, Senior Steam Generation Engineer
F. Dan, Senior Engineer
W. Raymond, Plant Superintendent
E. Weeks, Plant Engineer
W. Rapp, Senior Power Production Engineer
D. Voss, Acting Supervisor of Operations
J. Kamberg, Instrument Maintenance Foreman
D. Richardson, Mechanical Maintenance Foreman
G. Tully, Electrical Maintenance Foreman
R. Windlex, Electrician
S. Redeker, Power Production Engineer

2. Scope of Inspection of Fire Barriers for Cables

The inspection included an examination of (1) construction specifications for location and installation of fire barriers and compartment boundry seals for safety related cables and utilization of fire retardant coating on cables, (2) licensee's action pursuant to IE Bulletins Nos. 75-04 and 75-04A, and (3) a tour to determine extent of conformance to overall fire barrier requirements.

3. Construction Specifications

In 1968-1969 PG&E analyzed all thermal plant load centers and, at that time, embarked upon a program to separate units electrically. A program was also initiated to improve penetration and cable resistance to fire by the use of flame resistant insulation and fire stops. The Company's Engineering Department subsequently issued a manual entitled "Thermal Electric Design Standards." Accordingly, the licensee has been backfitting Humboldt to the new construction standards. The fire and smoke barriers used between the feed pump room and the reactor control room circuit consist of kaowool, Martinite (Johns-Manville product composed of incombustible asbestos fibers, diatomaceous silica and a hydrothermally produced inorganic binder) panels and Flamistic 71A as a sealant and fire retardant on top of the Martinite.

Barriers are only needed between the feed pump room and the control room since that is the only area where there are cable trays. All cables leaving the pump room going into the refueling building and drywell are carried inside of conduits. The conduit is frequently sealed with a moisture barrier of Dow-Corning silicone compound 732 or 738. The Construction Department mistakenly used some of this compound for the fire barriers to seal cabling that was disturbed during the last refueling outage. This will be removed during the forthcoming June refueling outage according to the licensee. (This error [use of flamable material] was discovered subsequent to the licensee's response letter of April 23, 1975 which states, "All seals used on floor and wall penetration seals are nonflamable.")

4. Examination of Fire Barriers

A tour of the facility was conducted to examine the location and installation of fire barriers and the utilization of fire retarding coating (Flamemastic 71A) for safety related cables. Specifically included in the examination were the penetrations leading into the control cabinets and switch gear in the control room and the penetrations leaving the feedwater pump room (cable spreading room). The safety related cabling leaving the pump room was encased in conduit.

It was found that the licensee had adhered to the construction specifications for fire barriers, except for the cabling that was disturbed during the last refueling outage. The inspector tested a small sample of Dow-Corning silicone compound (rubber-like in appearance) with a match. It ignited easily and sustained combustion until all of the surface area had burned. It could not be reignited without first removing the outer crust that had formed. As previously noted, the use of this material was a construction error and it will be replaced with Flamastic 71A in areas where it was used as part of the fire barrier.

Five large cardboard boxes were found stored on top of pull box No. 02 through which the principal safety related cables pass that lead from the feed pump room to the refueling building. (The use of this single pull box for redundant channels of safety related cabling is discussed in the licensee's report to the Commission entitled "Failure Mode Analysis of Reactor Protection Systems," dated January 20, 1970.) The boxes were leaning against the vertical cable trays leading into the pull box. They were promptly removed and satisfactorily stored by the licensee.

5. Maintenance and Modification Procedures

Plant maintenance and modification procedures do not specifically require adherence to the construction procedures for fire barriers. General policy dictates that systems disturbed by these activities be returned to their original state as stated in the licensee's response of April 23, 1975, "All maintenance during periods of operation is reviewed by at least the Shift Foreman and the cognizant Maintenance Foreman who assure that the work is carried out in accordance with established Company Accident Prevention and Fire Prevention rules. In addition, the Shift Foreman and Supervisor of Operations review maintenance activities to assure that the limiting conditions for reactor operation outlined in the Technical Specifications are maintained."

Existing "Company Accident Prevention and Fire Prevention Rules" address several of the areas identified in the IE Bulletins. The licensee was examining existing policies and procedures with plans to modify or expand as appropriate the remainder of items as they apply to construction, modification or maintenance activities.

According to the licensee, these policies and procedures will be included in the Plant Administrative Control Manual. This Manual is a part of the operational quality assurance program scheduled to be completed by December 31, 1975. In the interim, all such activities which could adversely affect reactor safety-related equipment will be reviewed by the Plant staff using the guidelines of IE Bulletin 75-04 and 75-04A. This interim procedure was to commence by May 23, 1975.

6. Emergency Procedures for Alternate Methods of Core Cooling

The alternate methods for core cooling and status of the "spectrum of alternate paths" were reviewed with the licensee. The Plant Emergency Procedures provide alternate methods for accomplishing an orderly plant shutdown and cooldown in case of loss of normal and preferred alternative shutdown and cooldown systems. The spectrum of alternative paths available to supply cooling water and remove decay heat is included in the Emergency Procedures and in the Equipment Description and Operating Instructions. In order to place this information in a more concise form, an outline of the spectrum of alternative paths available to supply cooling water and remove decay heat was being prepared as a part of the emergency procedures. This was scheduled to be accomplished by May 23, 1975.

7. Maintenance

Plant maintenance was examined by a review of (1) mechanical, electrical and instrument maintenance records, (2) quality assurance document records, (3) equipment surveillance records, (4) Control Operator's and Shift Foremans logs and (5) discussion with maintenance and operations personnel. Maintenance activities were examined in each of the following areas as indicated.

a. Reactor Coolant System

(1) Repair of reactor feedwater pump (out of service from 1/9/75-2/21/75)

(2) Disassembly and machining of feedwater control valve on 11/7/74

b. Reactivity and Power Control

(1) Picoammeter amplifier repair on 12/10/74

(2) Repair of picoammeter trip on 6/17/74

c. Core and Internals

(1) Replacement of feedwater sparger clamps during 12/74

(2) No other activity other than routine refueling work

d. Power Conversion System

(1) Replace main steam isolation valve on 11/5/75

(2) Test of reactor safety valve on 8/22/74

e. Auxiliary System

(1) Cleanup pump repair (out of service from 12/24/74 to 2/14/75)

(2) Overhaul of condensate pump from 10/31/74 to 12/13/74

f. Electrical System

(1) Replacement of brushes on rotary inverter on 4/14-16/75

(2) Servicing of MCC-10 transfer switch during 11-12/74

g. Emergency Core Cooling System or Containment System

(1) Servicing of circuit breaker for emergency condenser steam shut off valve on 11/12/74

(2) Installation of new style dry well rupture disc on 12/7/74

h. Other Engineered Safety Feature

(1) Adjustment of torque setting on emergency condenser condensate return valve on 3/17/75

(2) Servicing of liquid poison system manual stop valve on 12/6-7/75

The results of the inspection disclosed the following:

a. Maintenance activities were being performed in conformance with limiting conditions for operations.

b. Appropriate administrative approvals were being obtained for maintenance activities.

c. As a general rule, procedures in use had been prepared by craft foreman and/or the manufacturers maintenance manual were used for activities outside the scope of general craft knowledge. These procedures did not always require the use of checklists for detailed work such as the calibration of the pico-ammeter amplifier. Further, these procedures had not been approved by anyone other than the craft foreman.

d. Equipment was being inspected in accordance with the licensee's requirements.

e. Items were functionally tested and calibrated as necessary prior to returning the component or system to an operating status.

f. Quality control records were available for these maintenance activities (records pertaining to items a(1), c(1), d(1) and h(2) examined).

g. The maintenance activities were accomplished by qualified personnel as noted by company certification records.

U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION V

IE Inspection Report No. 50-312/75-04

Licensee Sacramento Municipal Utility District
P. O. Box 15830
Sacramento, California 95813

Docket No. 50-312
License No. DPR-54
Priority
Category B

Facility Rancho Seco

Location Clay Station, California

Type of Facility PWR, B&W, 913 MWe (2772 MWt)

Type of Inspection Routine & Special, Announced

Dates of Inspection April 22-25, 1975

Dates of Previous Inspection February 20, 25-27, 1975

Principal Inspector M. H. Malmros, Reactor Inspector — Date 5/6/75

Accompanying Inspectors None — Date

Date

Other Accompanying Personnel: None

Reviewed by G. S. Spencer, Chief, Reactor Testing and Operations Branch — Date 5/9/75

SUMMARY OF FINDINGS

Enforcement Action

None.

Licensee Action on Previously Identified Enforcement Items

None.

Unusual Occurrences

The circumstances and corrective action described in Abnormal Occurrence Reports Nos. 75-3 through 75-7 submitted by the licensee to Licensing were confirmed. (Paragraph 2 of Details)

Other Significant Findings

Current Findings

1. Design changes and modifications have been performed consistent with the Technical Specification requirements. (Paragraph 4 of Details)

2. Procedure revisions have been made consistent with the review and approval requirements of the Technical Specifications. (Paragraph 5 of Details)

3. Reactor operation in conformance to selected Technical Specifications was verified. (Paragraph 6 of Details)

4. The installation, modification and maintenance of fire barriers for cable trays and penetrations were consistent with specification and procedural requirements. (Section II of Details)

5. The detensioning of vertical and dome test tendons as required by the Technical Specifications for surveillance testing may not be possible. The licensee was evaluating the situation. This is designated as an unresolved item pending further information from the licensee. (Paragraph 7 of Details)

6. The facility has been designated in commercial operation for power levels up to 92.6%. (Paragraph 8 of Details)

c. The abnormal occurrences had been reviewed by the Plant Review Committee and the Management Safety Review Committee.

d. The limiting conditions for operation were met in all occurrences reported.

e. System and component failures have been reviewed by the plant staff and properly identified as abnormal occurrences when applicable.

f. Revision 3 to Operating Procedure A-51, "Auxiliary Feedwater System," was reviewed by the Plant Review Committee and approved for implementation on March 21, 1975. This revision implemented the corrective action commitment described in Abnormal Occurrence Report No. 74-10.

g. The initial data to determine the drift rate of the pressure transmitters as described in Abnormal Occurrence Report No. 75-5 were obtained on April 18, 1975. The results of the drift rate determination program will be reviewed during the next scheduled inspection.

3. IE Bulletin Followup

a. 75-03, ASCO Solenoid Valves

Through discussions with licensee representatives and an examination of facility records, the information and corrective action described in the licensee's response were verified. The licensee had received replacement springs and instructions directly from the manufacturer which specified, in detail, the resolution of the clearance and spring problem for Type 8300 and 8302 ASCO solenoid valves.

b. 75-04A, Cable Tray Fire - Browns Ferry

The action taken by the licensee regarding IE Bulletin No. 75-04A is described in Section II, "Details," of this report.

c. 75-05, Operability of Category I Hydraulic Shock and Sway Suppressors

The licensee had received IE Bulletin No. 75-05 and preparation of the response was in progress.

4. Design, Design Changes and Modifications

Design, design changes and modifications were controlled by the procedural requirements of SMUD quality assurance program. The records that document the review, approval, installation and testing of seven design changes and modifications to safety related systems or components were examined with the following comments noted:

a. Design changes were reviewed by the Plant Review Committee and the Management Safety Review Committee in accordance with the requirements of the Technical Specifications. The reviews addressed the criteria described in 10 CFR 50.59.

b. Design change documentation contained the results of engineering reviews for the specification of applicable codes, standards and acceptance test methods which define the acceptance criteria.

c. The results of the tests performed for acceptance of the design changes and modifications had been reviewed and approved in accordance with the QA program requirements. Test records indicated that the test results of completed modifications met the acceptance criteria.

d. Procedure revisions were made and approved when the completed modifications changed the operating methods or characteristics of the affected system or component.

e. Drawing change notices or vendor drawing change notices had been issued to reflect the design changes and modifications on the applicable as-built drawings.

5. Procedures

Procedures were reviewed for compliance to the requirements of the Technical Specifications and conformance to the guidance in Regulatory Guide 1.33 and ANSI N18.7. Procedures examined consisted of safety related procedures for system operations (10), emergency conditions (3), abnormal conditions and alarm response (10), and maintenance (3). The results of the review were as follows:

a. The review and approval of procedure revisions were in accordance with the Technical Specifications.

b. The procedures included appropriate Technical Specification limitations and as applicable required the use of checklists with provisions for signatures and dates.

c. No Technical Specification revisions have been approved that would require changes in procedures.

d. Temporary procedure changes (three in effect) did not conflict with the Technical Specification requirements.

6. Review of Safety Limits (SL), Limiting Safety System Settings (LSSS), and Limiting Conditions for Operations (LCO)

Records of reactor operations were examined to verify conformance to the following Technical Specifications:

a. Reactor Coolant System

TS 3.1.6.1
TS 3.1.6.2
TS 3.1.6.7

b. Reactivity and Power Control

TS 2.3.1

c. Core and Internals

TS 2.1.2
TS 3.5.2.6

d. Power Conversion Systems

TS 3.4.1.4

e. Auxiliary Systems

TS 3.3.1.C

f. Electrical Systems

TS 3.7.1

g. Emergency Power

TS 3.7.2.A
TS 3.7.2.B
TS 3.7.2.C
TS 3.7.2.D

h. Emergency Core Cooling System

TS 3.3.1.B

i. Other Engineered Safety Features

TS 3.3.1.D

Through direct observation of process instrumentation, reviews of control room logs (November 1974, February and March 1975), daily and weekly surveillance records (January through April 1975), and independent calculations of voltage settings for reactor trip set points, the operation of the facility was verified to be in conformance with the Technical Specifications listed above.

7. Independent Inspection

Additional areas of facility operation were examined by the inspector. Areas examined were as follows:

a. The results of special test procedure (STP-021) were verified to have been reviewed and approved. The test results indicated that the isolation valves to the Makeup Tank function as described in Amendment 29 to the FSAR dated January 5, 1975, which stated that upon receipt of a safety feature signal the valves would isolate the Makeup Tank from the high pressure injection pump injection header to prevent a loss of suction to the high pressure injection pumps.

b. The status of tendon surveillance testing was discussed with the cognizant licensee representative. The first year surveillance test was being performed by an outside contractor and was scheduled for completion in approximately two weeks. The licensee indicated that the vertical and dome test tendons may not be capable of being completely detensioned as required by Technical Specification 4.4.2.2. The specific reasons for this problem were being investigated by the licensee and would be fully documented in the report of the tendon surveillance tests. The test results and resolution of any test deficiencies will be examined during the next scheduled inspection.

8. Power Ascension Test Program

The power ascension testing has been completed through 92.6% of full power. The reviewed and approved test results for TP 800-40, "Shutdown Outside of the Control Room," were verified by the inspector to have

met the acceptance criteria of the test procedure. The test program will continue at the 100% power level plateau, as required by Technical Specification 3.12, upon approval from Licensing to escalate power to 2772 MWt. The licensee declared the plant in commercial operation for power levels up to 92.6% of full power on April 17, 1975.

SECTION II

DETAILS

1. Persons Contacted

   a. Sacramento Municipal Utility District

      R. Rodriguez, Manager, Nuclear Operations
      J. Dunn, Supervisory Electrical Engineer
      J. Wheeler, Electrical Engineer
      L. Schwieger, Quality Assurance Director
      J. Jewett, Quality Assurance Engineer

   b. Bechtel

      G. Jacobson, Electrical Inspector

2. Installation of Fire Stops on Electrical Cables and Penetration Seals

   a. Facility Specifications

      The requirements for the location and installation of fire barriers and compartment boundary seals for safety related cables including the application of fire retardant coatings for safety related cables were described in the FSAR Section 8.2.2.10, "Evaluation of the Physical Layout of Electrical Distribution System Equipment," and in engineering drawings, and construction specifications. Through discussions with licensee representatives and an examination of the above documents, it was determined that the following requirements were imposed:

      (1) Fire stops were installed at all locations where cable trays passed through a compartment boundary as indicated on Bechtel Drawing No. 734, "Conduit and Tray Arrangement Plan."

      (2) Where conduits carrying Class I instrumentation cables were installed parallel to and above power cable trays, the conduits were wrapped with one inch thick insulation thermobestos for protection.

(3) Haysite polyester board fire barriers were installed between the crossovers of cable trays carrying different channels.

(4) Fire barriers were installed where cable trays or conduits penetrated electrical panels.

(5) Bechtel Drawing No. E-783, Revision 3, specified that fire barriers were to consist of (1) 1/4 inch polyester board #ETR-FR-C from the Haysite Division of the Synthane-Taylor Corporation; (2) Kaowool - Bulk A high purity from Babcock & Wilcox; and (3) Flamemastic 71A - sprayable from Dyna-Therm Corporation.

(6) The Haysite polyester board was sized to maintain a minimum of three inches and a maximum of six inch overlap of the cable tray penetration in the compartment boundary.

(7) The Haysite polyester board was to be cut to fit around the tray and cable with the remaining voids packed with Kaowool.

(8) Flamemastic 71A was applied to fill the seams between the Haysite polyester board, seal the edges of the polyester board to the mounting medium, and cover all Kaowool and exposed cables to a distance of 12 inches from the fire stop. The Flamemastic 71A coating was a minimum of 1/8 inches thick.

b. Fire Barrier Inspections and Tests

Inspections of the initial installation of the fire barriers were performed by Bechtel inspectors using Bechtel Quality Control Instruction No. 206, "Installation Inspection of Cable Trays." The results of these inspections were documented on Construction Inspection Data Reports (CIDR). Record copies of the following CIDR's were examined by the inspector and found to document a completed inspection program of initial fire barrier installation.

(1) CIDR - Installation of Fire Barriers for Cable and Conduit Penetration of Electrical Panels and Cabinets.
Inspection performed July-August 1974.

(2) CIDR - Installation of Fire Barriers for Wall Penetrations and Tray Separation.
Inspection performed May through October 1974.

(3) CIDR - Installation of Fire Barriers for Cable and Conduit Crossover Separation.
Inspection performed July through October 1974.

Tests of fire barrier adequacy were performed by Bechtel and SMUD personnel at the Rancho Seco site on April 4-5, 1974. Three separate tests were conducted in a test stand with various types of cables secured in six inch vertical cable trays. Fire barriers using 1/4 inch Haysite polyester board, Kaowool and Flamemastic 71A were installed on the cable trays. Flame temperatures of approximately 1900° F. were applied from a 10 inch ribbon burner at a 30 degree angle from the vertical to the underside of the fire barrier. The flame was applied for 30 minutes in two tests and for one hour in the last test. The test results concluded that the fire barrier limits the amount of heat transmitted from the fire on one side to cables on the other side and prevents cables which have been ignited from propagating the flames past the fire barrier. The fire barriers remained intact during all tests conducted.

c. Maintenance and Modification

The maintenance and modification of fire barriers as a result of recent cable changes have remained under the supervision of Bechtel. The procedures and specifications including the inspection documentation methods were the same as those used during initial installation. The licensee's response to IE Bulletin No. 74-04A indicated that their policies and procedures for maintenance and modification control will be reviewed and changes thereto will be implemented to provide SMUD with the equivalent requirements currently incorporated in the Bechtel procedures.

Through discussions with licensee and Bechtel representatives and an examination of applicable documents, 26 fire barriers were found to have required rework as a result of cable removal or addition. A review of the records verified that the specifications and inspection requirements had been met for the fire barrier rework performed by Bechtel.

d. Visual Examination of Fire Barriers

The inspector toured the facility in company with licensee representatives to visually confirm the status of cable tray and penetration seal installation. The visual examination of

fire barriers was performed in accessible areas of the facility with the exception of the containment building since the reactor was operating at 92% of full power. The following observations were made:

(1) Fire barriers recently modified due to cable changes had been repaired to original installation specifications.

(2) Cable tray penetrations through floor, ceiling and wall openings in the 480 and 4160 volt switch gear rooms, A, B, C and D battery rooms, diesel generator rooms, cable shafts and cable spreading area contained fire barriers.

(3) Flamemastic 71A was verified to have covered the specified area of the fire barrier. Measurements for a 12 inch application along the cables and cable tray to a thickness of 1/8 inch were made on randomly selected fire barriers in each compartment.

(4) Crossover polyester fire barriers had been installed.

(5) Carbon dioxide fire extinguishing systems were operational. The carbon dioxide emitting nozzles were unobstructed and the smoke and heat sensors positioned to detect cable tray fires.

e. <u>IE Bulletin Response</u>

On April 23, 1975, the licensee submitted a response to IE Bulletins Nos. 74-04 and 74-04A. The review of policies and procedures described in the licensee's response have commenced. Monthly reports will be provided to indicate the status of open items described in their response. The review and resultant changes in policies or procedures were scheduled for completion by the licensee on August 1, 1975.

U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION V

IE Inspection Report No. 50-206/75-03

Licensee Southern California Edison Company
2244 Walnut Grove Avenue
Rosemead, California 91770

Docket No. 50-206
License No. DPR-13
Priority
Category C

Facility San Onofre Unit 1

Location Camp Pendleton, California

Type of Facility PWR (450 MWe, 1347 MWt)

Type of Inspection Special, Announced (In Conjunction with routine inspection)

Dates of Inspection April 21-23, 1975

Dates of Previous Inspection April 7-10, 15-17 & 21-23, 1975

Principal Inspector R T Dodds 5/1/75
R. T. Dodds, Reactor Inspector Date

Accompanying Inspectors None
Date

Date

Other Accompanying Personnel: None

Reviewed by G S Spencer 5/1/75
G. S. Spencer, Chief, Reactor Testing & Operations Br. Date

SUMMARY

Enforcement Action

None

Licensee Action on Previously Identified Enforcement Action

Not applicable

Unusual Occurrences

Not applicable

Current Findings

The licensee has examined IE Bulletins Nos. 75-04 and 04A and determined that the only action required will be to expand existing administrative and maintenance procedures to emphasize salient points of the bulletins. This will be accomplished within 30 days. Fire barriers for vertical cable trays were found to be of asbestos sheet with Flamemastic 71A (Dyna-Therm Corp.) applied above and below the barrier to fill the spaces between cables. Examination of cabling and the use of fire barriers disclosed the following items that will be re-evaluated by the licensee and acted upon accordingly.

A. Smoke detectors in the chem-feed and lube oil area have been shielded from cabling and lube oil filters by blast shielding installed for protection from pipe whip during the recent refueling outage. (Paragraph 4)

B. The fire barrier between the 4 kv cable spread room and the chem-feed and lube oil area consisted only of galvanized sheet through which the cable trays pass, without an air stop or use of fire retardant material on the cabling. (Paragraph 4)

C. Fire barriers had not been installed on two vertical cable trays in the 4 kv cable spread room as required by construction specification. (Paragraph 4)

Management Interview

The results of the special inspection were discussed with Mr. Ottoson and principal members of the plant staff. A followup telephone call was made on April 25 to obtain the licensee's evaluation of the inspector's observations. The following commitments were proffered by the licensee.

1. The smoke detectors will be relocated to assure optimum coverage. (Paragraph 4)

2. It appears that additional protection is desirable between the 4 kv cable spread room and the chem-feed and lube oil area. Engineering assistance has been requested. (Paragraph 4)

3. Fire stops will be installed on the vertical cable trays in the cable spread room as soon as the required barrier materials have been obtained. (Paragraph 4)

4. The administrative procedures pertaining to maintenance and modification activities will be strengthened within 30 days to specifically bring attention to the need to maintain fire barriers and compartment boundary seals. (Paragraphs 5 and 6)

DETAILS

1. Persons Contacted

H. L. Ottoson, Plant Superintendent
J. M. Curran, Plant Engineer
R. R. Brunnet, Supervisor Plant Operations
J. F. Bankovich, Supervisor of Maintenance
P. Penseyres, Nuclear Engineer

2. Scope of Inspection

The special inspection included an examination of (1) construction specifications for location and installation of fire barriers and compartment boundary seals for safety related cables and utilization of fire retardent coating on cables, (2) licensee's action pursuant to IE Bulletins Nos. 75-04 and 75-04A, and (3) tour to determine extent of conformance to overall fire barrier requirements.

3. Construction Specifications

Fire barriers were added as a result of the cable tray fire in the plant in 1968 in accordance with Engineering Change Notice No. 222 (Plant Revision No. 68-78) as stated in Section 4.2.9 of the FSAR. The specifications require fire barriers to be provided where cables pass from one area to another and on vertical trays with more than 10 foot change in elevation.

The specifications require the barriers to be constructed of asbestos type sheet material with a Dyna-Therm Flamemastic 71A coating applied three inches above and six inches below the barrier on vertical trays. The spaces between cables at the barrier were to be sealed with Flamemastic 71A Mastic.

Attached to the report is a Technical Bulletin by Dyna-Therm Corporation that enumerates the properties of Flamemastic 71A.

4. Examination of Fire Barriers

A tour of the facility, including the interior of the containment vessel, was conducted to examine the location and installation of fire barriers and the utilization of fire retarding coating (Flamemastic 71A) for safety related cables. As a general rule, the licensee had adhered to the construction specifications for fire barriers. However, the following deviations were identified.

a. Smoke detectors in the chem-feed and lube oil area have been shielded from cabling and lube oil filters by blast shielding installed for protection from pipe whip during the recent refueling outage.

b. The fire barrier between the 4 kv cable spread room and the chem-feed and lube oil area consisted only of galvanized sheet through which the cable trays pass, without an air stop or use of fire retardant material on the cabling. This was also the case in the other 4 kv switchgear room.

c. Fire barriers had not been installed on vertical cable trays 60V60 and 60V61 in the 4 kv cable spread room as required by construction specification.

5. Maintenance and Modification Procedures

Maintenance and modification procedures do not specifically require adherence to the construction procedures for fire barriers. General policy dictates that systems disturbed by these activities be returned to their original state. The construction engineer for the pipe whip modification stated that only one of the cables that pass through a fire barrier was disturbed. In this instance, the sealant was still malleable and was re-formed around the cable after it was replaced. The administrative procedures will be strengthened in this area, according to the licensee.

6. Status of Licensee's Review of IE Bulletins 75-04 and 04A

The licensee has examined the subject bulletins and determined that the only action required will be to expand existing administrative and maintenance procedures to emphasize salient points of the bulletins. This will be accomplished within 30 days.

FLAMEMASTIC* 71A SYSTEM

PRODUCT DESCRIPTION

DYNA-THERM FLAMEMASTIC coatings are compounded of thermoplastic resinous binders, flame retardant chemicals and inorganic incombustible fibers.

TYPICAL PROPERTIES

FIRE RESISTANT CHARACTERISTICS

No burn-through of 1/16" coating after 15 minutes exposure to propane torch. Flame temp. 2050°F. Distance from torch 2".

EFFECT ON AMPACITY OF CABLES

Reduction of current-carrying capacity in various tests on grouped cables coated with Flamemastic ranges from 1% to 10% depending on thickness and test procedure. Maximum temperature increase on cable jacket 2-1/2%. Test reports on request.

EFFECT ON CABLE JACKET

None

WEATHER RESISTANCE

No adverse effects after 600 hours in Atlas Twin Arc Weather-Ometer, DLTS-X; U.S. Testing Company Test Report No. LA 16880-2.

TOXICITY

Waterbase - odorless - non-toxic

WEIGHT PER GALLON

Flamemastic 71A Sprayable	11.0#/Gal.
Flamemastic 71A Mastic	11.4#/Gal.

*Registered Trademark - Patent Applied For

SOLIDS

Flamemastic 71A Sprayable	64.4%
Flamemastic 71A Mastic	67.3%

FLASH POINT

Flamemastic 71A Sprayable	None
Flamemastic 71A Mastic	None

HARDNESS OF DRY FILM

Flamemastic 71A Sprayable	86 Shore A
Flamemastic 71A Mastic	86 Shore A

LOW TEMPERATURE PERFORMANCE

Specimens: 2 cable sections, 3/4" diameter, coated with 1/8" thick Flamemastic 71A.

Test	Description	Results
Thermal Cycle	12 hrs. at -100°F followed by 12 hrs. at 75°F	Passes 10 cycles unaffected
Thermal Shock	1 hr. at 300°F followed immediately by 1/2 hr. in -90°F alcohol bath	Passes 10 cycles unaffected

Performance after Low Temperature Tests: All specimens displayed the same performance characteristics exhibited by coated cables which had not been subjected to low temperature testing.

SPECIAL NOTE

Flamemastic 71A, like all waterbase materials must be protected from freezing during shipment and storage.

U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
REGION IV

IE Inspection Report No. 50-267/75-04 — Docket No. 50-267

Licensee: Public Service Company of Colorado — License No. DPR-34

Facility: Fort St. Vrain Nuclear Generating Station — Category B

Location: Platteville, Colorado

Type of Licensee: Power Reactor (HTGR 330, MWe-GGA)

Type of Inspection: Routine, Unannounced

Dates of Inspection: April 17-24, 1975

Dates of Previous Inspection: March 24-25, 1975

Inspector: T. F. Westerman — 5/9/75
T. F. Westerman, Reactor Inspector — Date

Accompanying Inspector: J. E. Gagliardo — 5/9/75
J. E. Gagliardo, Reactor Inspector — Date

Other Accompanying Personnel: None

Reviewed By: G. L. Madsen — 5/9/75
G. L. Madsen, Chief, Reactor Construction and Operations Branch — Date

SUMMARY OF FINDINGS

Enforcement Action

A. Items of Noncompliance

1. Contrary to 10 CFR 50, Appendix B, Criterion V; the Final Safety Analysis Report, Appendix C.3 and Question 7.4; and Specification 1-N-2, "Electrical Installation Work, Part 2":

   (a) Vertical cable tray fire stops between floors were not specified in the construction specifications 1-N-2 and are not installed.

   (b) Fire stops in the Reactor Confinement Building and Diesel Generator Room vertical cable risers have not been installed.

   (c) The fire stops for horizontal cable trays were not installed as specified in that none of the fire stops were found to be completed units.

   (d) Ventilation openings in which the vent duct passes into the battery room were not sealed.

   (e) The fiber fill has not been installed in conduits passing through the auxiliary electrical equipment and switchgear room walls.

   (f) The fire barrier installed in the bottom of the penetration into the auxiliary electrical panel floor was not as specified by Specification 1-N-2, in that the material specifications were not maintained.

   (g) Separation of test cables in the cable spreading room has not been maintained.

   (h) Potential flammable material is located in the cable spreading room.

   (i) The battery room door was found open into the 480 vital switchgear room.

   (DETAILS, paragraph B.2.b)

(continued)

2. An abnormal occurrence (failure of 1A diesel generator) on October 18, 1974 had not been reported and the required action had not been taken by the licensee in accordance with TS AC 7.6 and TS AC 7.3. (DETAILS, paragraph B.1.c)

3. Contrary to Criterion V, Appendix B, 10 CFR 50:

   (a) Administrative approval was not obtained prior to commencing maintenance activities as specified by ADM-12.

   (b) Quality Assurance inspection procedures have not been established as required by QAP 1200.

   (DETAILS, paragraph B.1.d(1), and B.1.e)

4. Contrary to TS AC 7.5(b), safety related maintenance activities had been completed without an approved procedure. (DETAILS, paragraph B.1.d(2))

5. Contrary to Criterion XVI, Appendix B, 10 CFR 50, deficiencies reported from the two QA audits of maintenance activities (which were conducted in May 1974) have not been responded to by plant personnel. (DETAILS, B.1.e)

6. Contrary to Criterion XII, Appendix B, 10 CFR 50, the licensee did not calibrate the buffer/Helium dryer knockout pot level alarm following installation. (DETAILS, paragraph B.8.c)

7. Contrary to 10 CFR 50.59 and 10 CFR 50, Appendix B, Criterion III, facility changes are being processed as Temporary Change Requests without performing a safety analysis or providing design control requirements. (DETAILS, paragraph B.10.b(1))

8. Contrary to Technical Specification AC 7.5.e, temporary changes were not being processed as required for Standard Operating Procedure SOP 42 on 4/16/75 and temporary changes to Surveillance Test Procedures. (DETAILS, paragraphs B.10.b(2) and B.3.b(2))

9. Contrary to Technical Specification 7.1.3.d.9, violations of internal procedures identified by the licensee's QA were not forwarded to the Nuclear Facility Safety Committee for investigation. (DETAILS, paragraph B.10.b(5))

10. Contrary to Technical Specification 5.1.2.d, Surveillance Test Procedure 5.1.2.bd specifies reserve shutdown system low pressure alarm set points outside of Technical Specification requirements and as a result eight reserve shutdown system alarm switches

(continued)

are set less than the Technical Specification limit for this system. (DETAILS, paragraph B.3.b(1))

11. Surveillance Test Procedures were issued from the period of December 21, 1973 to December 10, 1974 without Plant Operation Review Committee review as required by TS AC 7.5.d. (DETAILS, paragraph B.3.b(3))

12. Audits by the Nuclear Facility Safety Committee had not been conducted as required by TS AC 7.1.3.d.4 and 7. (DETAILS, paragraph B.4)

13. Contrary to Technical Specification AC 7.1.3.d.12, only proposed tests or experiments considered to be safety significant are being forwarded to the Nuclear Facility Safety Committee for review. (DETAILS, paragraph B.5)

14. Contrary to 10 CFR 50, Appendix B, Criterion III and the FSAR, Appendix C.2; the Helium bottles (37) associated with the reserve shutdown system were not seismically restrained. (DETAILS, paragraph B.10.b(4))

15. The licensee's Semiannual Report, dated January 1975, did not provide the detailed information on maintenance activities in accordance with TS AC 7.6(c). (DETAILS, paragraph B.1.b)

16. Contrary to TS AC 7.4(b)(8) and QAP-1200, the licensee had not prepared the required QA records for maintenance activities. (DETAILS, paragraph B.1.d(5))

17. Contrary to Criterion XVII, Appendix B, 10 CFR 50; the licensee failed to maintain the records required by Administrative and QA procedures with respect to inspection of maintenance activities and entries in auxiliary logs. (DETAILS, paragraph B.1.d(3), B.10.b(3))

18. Contrary to Criterion XI, Appendix B, 10 CFR 50; records were not available relative to functional tests performed prior to returning a system/component to normal service, following 6 of 18 safety related maintenance activities reviewed by the inspector. (DETAILS, paragraph B.1.d(4))

Licensee Action on Previously Identified Enforcement Actions

Not inspected.

(continued)

Design Changes

None.

Other Significant Findings

Current Unresolved Items

7504-1 PCRV Cooling System ΔT

Based on the results of B Series testing (through sequence 7), the licensee is reviewing the adequacy of this system to maintain PCRV Cooling System ΔT's less than TS limits during escalation to power. (DETAILS, paragraph B.6.a(1))

7504-2 Load Cell Data

The load cell acceptance criteria is being reviewed. The licensee stated that a possible problem with two cells may exist. (DETAILS, paragraph B.6.a(2))

7504-3 Backup Bearing Water System

The licensee is reviewing possible interplay between the Helium Circulator Loops. (DETAILS, paragraph B.6.b(1))

7504-4 Seismic Restraints for Class I Bottles

Other gas bottles associated with Class I Systems (i.e., circulator shutdown seal and brake) are being reviewed by the licensee to determine conformance with the seismic criteria for Class I Systems. (DETAILS, paragraph B.10.b(4))

7504-5 Possible Unusual Event

The licensee is evaluating the reportability of a failure of a bearing water accumulator isolation valve as an unusual occurrence. (DETAILS, paragraph B.1.c)

Status of Previously Identified Unresolved Items

7503-2 Possible Capability to Flood Pelton Wheel Cavity

The licensee is continuing to review this item. (DETAILS, paragraph 7)

Management Interview

A management interview was held with Mr. Swart, Superintendent, Nuclear Production and other plant staff on April 24, 1975.

(continued)

A. General

The areas inspected, as reported in the Details Section of this report, were summarized.

B. Items of Noncompliance

The apparent items of noncompliance with the Commission's requirements were discussed as identified in the Enforcement Section of this report.

The inspector stated that a corporate management meeting would be requested in view of the significant number of items identified.

(continued)

REPORT DETAILS

A. Persons Contacted

Public Service Company of Colorado (PSC)

F. Swart, Superintendent, Nuclear Production
L. Brey, Superintendent, Operations
F. Mathie, Superintendent, Maintenance
D. Warembourg, Quality Assurance Director
J. Reader, Resident Engineer
L. McInroy, QA Supervisor
R. Kishiyama, Electrical Engineering
W. Hillyard, Training Coordinator
J. Simpson, Electrical Engineering
D. Rogers, Operation Supervisor
E. Hill, Senior Results Engineer
W. Franek, Results Engineer
J. Liebelt, Plant Electrician

General Atomic (GA)

J. Zannot, Projett Manager
D. Glenn, Electrical Engineering
F. Bain, Mechanical Engineering

B. Report of Subjects Inspected

1. Maintenance

a. Scope of Inspection

Maintenance activities on safety related systems and components were selectively reviewed to verify that maintenance activities were conducted in accordance with approved procedures, regulatory guides and industry standards and in conformance with Technical Specification (TS) requirements.

The inspector selected for review two maintenance activities from each of nine major system areas. The records of these activities were reviewed in detail to verify that:

(1) the limiting conditions for operation were met while the component or system subject to the maintenance was removed from service

(2) administrative approvals required by the licensee's administrative procedures were obtained prior to initiating the work

(continued)

(3) the maintenance activities were accomplished using approved procedures

(4) the maintenance activities were inspected in accordance with the requirements of the licensee's Quality Assurance Plans (QAP)

(5) the components or systems affected by the maintenance were functionally tested prior to their return to an operating status

(6) the quality control records required by the licensee's administrative procedures and QAP's for each maintenance activity had been prepared and was retained in accordance with the TS

b. Reporting of Maintenance Activities

In preparing for this inspection effort, the inspector reviewed the licensee's Semiannual Report (dated January 1975) for the period July 1 through December 31, 1974. The inspector had planned to select the maintenance activities for review from those listed in the above report. The inspector found that contrary to the requirements of Technical Specification AC 7.6(c) the above semiannual report did not contain the required detailed information on safety related maintenance activities.

c. Plant Trouble Reports

Since the details of safety related maintenance activities were not available in the semiannual report, the inspector selected many of the maintenance activities he would review from the Plant Trouble Reports (PTR) at the site. PTR's provide a mechanism by which licensee's personnel can inform management of an equipment or system problem. The PTR can also be used to document the corrective maintenance which was taken and the subsequent inspection and functional testing performed.

The inspector reviewed all completed PTR's from August 1974 through April 1975 for the following systems:

System No.	System Title
11	Reactor Vessel and Internal Components
12	Control Rods and Drives
18	Fuel
21	Primary Coolant System
22	Secondary Coolant System
23	Helium Purification System
92	Electrical
93	Controls and Instrumentation

(continued)

During the review of the PTR's, the inspector found that on October 18, 1974 a PTR (10-220) was initiated to report a trip of the 1A and 1B engines to diesel generator 1A. The PTR indicated that the engines had tripped after approximately fifteen (15) minutes of operation due to high water temperature. Further investigation into this incident disclosed that both engines had been given a quarterly inspection during the period October 14 through 16, 1974. The inspector reviewed the completed check-off lists for both engines and noted that the engines had been functionally tested after the inspection. The maintenance work report was completed and signed by the operator conducting the test on October 16, 1974. The operating logs on October 17, 1974 indicated that the clearance had been removed from the engines and an entry was made indicating that the 1A diesel generator was operable and in standby. The fact that the 1A diesel generator had been declared operable and subsequently failed constitutes an abnormal occurrence as defined by Technical Specification (TS) 2.1(f). Contrary to the requirements of TS AC 7.6 (Non-Routine Reports) this abnormal occurrence was not reported to the NRC Regional Office, and the additional actions required by TS 7.3 in the event of an abnormal occurrence were not taken.

The inspector also found that on December 24, 1974 a PTR (17-368) was initiated which reported the failure of valve HV-2189-8 to open due to a stuck solenoid. This valve isolates the bearing water accumulator tank from its circulator after the brake and seal have been set. The licensee is reviewing the reportability of this item as an unusual event in accordance with TS AC 7.6.

d. Results of Maintenance Activity Review

The maintenance activities which were reviewed during this inspection and the results of the review are shown in Table I. These activities were selected from the Semiannual Report of July 1 - December 31, 1974 and from the plant trouble reports which were reviewed at the site. This review disclosed several items of noncompliance with NRC requirements and conditions of the Technical Specification. The following items of noncompliance were found during this review:

(1) Criterion V of Appendix B to 10 CFR 50 requires, in part, that: "Activities affecting quality shall be prescribed by documented instructions, procedures, ... and shall be accomplished in accordance with these instructions, procedu ...." Fort St. Vrain Administrative Procedure ADM-12 (Maintenance and Repair Procedures), Section 2.1 and 2.2, establishes the requirements for the preparation and

(continued)

approval of maintenance procedures. This procedure also establishes the mechanism for providing administrative approval to initiate maintenance activities. Contrary to the above requirements, administrative approval to initiate the work had not been given on thirteen (13) of the eighteen (18) maintenance activities reviewed (Table I).

(2) Technical Specification AC 7.5(b) and administrative procedure ADM-12 requires that procedures shall be developed and approved prior to implementing safety related maintenance. Seventeen (17) of the eighteen (18) maintenance activities reviewed were safety related and thus required written procedures. Contrary to the above requirements, thirteen (13) of the seventeen (17) activities had been completed without an approved procedure.

(3) Fort St. Vrain Quality Assurance Plan QAP-1200 (Maintenance or Repair of Nuclear Class I Systems) and Quality Assurance Instruction QAI-11 (Delegation of Specific Responsibilities) establish specific requirements for the inspection of safety related maintenance activities by an individual other than those who performed the maintenance activity. Contrary to Criterion XVII of Appendix B to 10 CFR 50, documentation did not exist to verify performance of the required inspection for thirteen (13) of the eighteen (18) maintenance activities reviewed. Licensee representatives interviewed stated that maintenance activities are inspected by the foreman or a senior technician, but these inspections are not always documented

(4) Fort St. Vrain Administrative Procedure ADM-12 and Quality Assurance Plan QAP-1200 establish requirements for post maintenance tests or operations prior to returning a component or system to service. QAP-1200 also establishes the requirement for documenting these tests. Contrary to Criterion XI of Appendix B to 10 CFR 50, and the above procedural requirements, no records exist to verify that six (6) of the eighteen (18) maintenance activities reviewed (Table I) had been functionally tested prior to returning the system/component to normal service. Licensee representatives claimed that the functional tests were conducted, but no records exist to verify the test performed.

(5) Section 7.0 of Quality Assurance Plan QAP-1200 establishes the requirements for the QA reports and records to be maintained for safety related maintenance activities. TS AC 7.4(b)(8) further requires that the records of principle maintenance activities be retained for the life

(continued)

of the plant. Contrary to 10 CFR 50, Appendix B, Criterion V and the above requirements, all of the required QA records had not been prepared for any of the eighteen (18) maintenance activities reviewed.

e. Quality Assurance

As part of this inspection effort, the inspector interviewed members of the licensee's QA Department to determine the extent of the QA involvement in maintenance activities. Quality Assurance Plan QAP-1200, Section 6.0, requires that quality assurance inspection procedures shall be prepared to cover routine, non-routine and special maintenance activities. The inspector found that contrary to these requirements and those of 10 CFR 50, Appendix B, Criterion V, no quality assurance inspection procedures had been prepared as of the dates of this inspection.

During this QA review, the inspector also found that in May 1974 the QA Department conducted two audits of the licensee's maintenance in accordance with Quality Assurance Audit Procedures QAAP-1201 and QAAP 1203. The results of the audits were reported to the licensee management, but as of the dates of this inspection management had not responded to the audit reports and corrective action on the deficiencies noted had not been completed. A QA Department representative stated that several informal memorandums had been sent to management reminding them of the fact that no action had been taken on the audits. Criterion XVI to Appendix B of 10 CFR 50 requires that measures shall be established to assure that conditiions adverse to quality are promptly identified and corrected. The failure to respond and correct the deficiencies noted in the above audit reports is contrary to the above Appendix B requirements.

2. Fire Protection

a. Area of Inspection

This inspection was conducted to determine compliance with 10 CFR 50, Appendix B, Criterion V with respect to fire protection for electrical equipment. This inspection included:

(1) Review of facility construction specifications to determine that requirements in conformance with the FSAR, Appendix C.3 (which delineates fire protection requirements in accordance with 10 CFR 50, Appendix A, Criterion 3).

(a) Location and installation of fire barriers and compartment boundary seals for safety related cables.

(b) Application and extent of application of fire retardant coating for safety related cables.

(continued)

(2) Review maintenance and modification procedures against the above requirements.

(3) Visual examination of cables and vital areas.

(4) Status of Licensee's response to IE Bulletins 75-04 and 75-04A.

(5) Other fire protection requirements of the FSAR, Appendix C and Question 7.4, Amendment 19, concerning cable separation.

b. Inspection Finding

(1) Review of Construction Specification Requirements

The inspector found that the Sargent and Lundy Specification 1-N-2 (Issue A, dated January 18, 1969) for Electrical Installation Work, Part 2, and associated construction detail drawings do delineate fire stop requirements and application of fire retardant coatings; however, fire stops on vertical cable tray runs between floors had not been specified. The FSAR, Appendix C, states that, "Adequate fire stops are used with all major cableways between floors on vertical runs."

This item was identified as an item of noncompliance at the exit meeting.

(2) Review of Maintenance and Modification Procedures

Class I system changes processed through PSC Engineering Department are reviewed in accordance with ENG-1 for separation and segregation.

The inspector could find no maintenance or modification requirements with respect to maintaining fire barriers, compartment boundary seals, or application of fire retardant coatings. This item will be followed up during the review of the licensee's reply to IE Bulletin 75-04A.

(3) Inspection of Cables and Vital Areas

Sargent and Lundy Specification 1-N-2 (Issue A, dated January 18, 1969), Supplement 1 (concerning cable separation), and associated detail construction drawings were used in determining the licensee's conformance with 10 CFR 50, Appendix A, General Design Criterion 3, Fire Protection. The FSAR, Appendix C.3, delineates the licensee's commitment to conform to Criterion 3 of Appendix A. The cable separation requirements identified in

(continued)

Appendix C.3 of the FSAR are further defined in Question 7.4 of the FSAR, Amendment 19.

(a) Vertical Cable Tray Risers Reactor Building

The detail construction drawings (such as E-43, Revision J; E-41, Revision B; and E-42, Revision H, "Cable Trays Reactor Building Sec's and Det's") specify that fire stops are to be installed in the Reactor Building vertical risers in accordance with Sargent and Lundy Standard STD-EA-176. STD-EA-176 specifies that a fire stop will consist of two feet of insulating material (Owens-Corning Fiberglas, Corp., Thermal Insulating Wool or equivalent) with Flamemastic 71 or other suitable material to hold the insulating material in place.

The inspector did not find that fire stops had been installed in any of the vertical cable tray risers in the Reactor Building. This item was identified at the exit meeting as an item of noncompliance. The licensee is initiating corrective action.

(b) Reactor Building to Auxiliary Building Cable Seals

Detail construction drawing E-140, Revision F, specifies that transit sleeves, as manufactured by Nelson Electric Division of Sola Basic Industries, are to be installed in multiple clusters at the point the cables pass through the Reactor Building wall into the Auxiliary Building.

The inspector found that sleeves are installed as required.

(c) Horizontal Cable Trays

Detail construction drawing E-54, Revision K, specifies three-eighth inch Marinite Sheets are to be cut to fit after cables are installed and placed on each side of the wall. The void on each side of the tray and between the sheets are to be packed with an inorganic fiber material.

The inspector found no horizontal tray fire stops installed in accordance with drawing E-54. The "as installed" fire stops varied from tray to tray (Marinite sheets on each side of the wall, Marinite sheets on one side, and in at least two cases, no Marinite sheets). The inspector found no cases in

(continued)

which the inorganic fiber material had been installed. The inspector stated at the exit meeting that this item was considered an item of noncompliance. The licensee is initiating action to install the fire stops as required by construction specification 1-N-2.

(d) Vertical Cable Tray Risers

The inspector could find no construction specification requirements for vertical cable tray risers through floors of vital rooms such as the cable spreading room.

A riser fire stop was specified in detail construction drawing E-54, Revision K, for the cable riser out of the diesel room ceiling. E-54 specified a one-fourth inch Marinite sheet is to be placed approximately six inches below the top of the ceiling, with a fill of Flamastic #71 per Sargent and Lundy Standard-175, to a minimum of two inches above the ceiling. A cover plate was specified to seal the opening the tray passed through at the top of the ceiling.

The inspector could find no fire stops installed in the cable tray risers passing through the cable spreading room floor. Neither the cover plate or fire stops were installed in the two diesel room risers. The inspector stated at the exit meeting that this item was considered an item of noncompliance. The licensee is initiating corrective action.

(e) Ventilation Duct to Battery Rooms

The inspector found the ventilation opening into the battery room was only partially sealed by the ventilation duct entering the battery room. Detail construction drawing M-122, Revision K, specifies that wall openings in which vent ducts pass are to be sealed by 2"X2"X½" angle on all four sides.

The inspector stated at the exit meeting that this was considered an item of noncompliance. The licensee is initiating corrective action.

(f) Conduit Sleeve and Cable Installation

Detail construction drawing E-54, Revision K, specifies that (for a typical conduit sleeve and cable installation through the Auxiliary Electrical Equipment and Switchgear room walls after all cables are pulled) each conduit is

(continued)

filled with inorganic fiber material. The inspector verified by telephone on May 2, 1975 to the site, that the fiber fill had not been installed as required. The licensee has initiated corrective action.

(g) Auxiliary Electrical Equipment Room Panel Floor Seal and Fire Barrier

Detail construction drawing E-45, Revision KK, specifies that the cables, entering through the Cable Spreading Room floors into the bottom of the Auxiliary Electrical Equipment Room panels, are to pass through an Ebony Board covered with a two inch thickness of insulating wool (as made by Owens-Corning or approved equal) and with an upper surface coating of Chicago Masters Company Stymastic Coating.

The inspector found that contrary to drawing E-45, a one-half inch asbestos board coated with one-half inch of Scotchcast Brand Resin No. 16 had been installed in place of the prescribed barrier. The licensee could produce no record of an approved deviation from specification requirements. This item was identified as an item of noncompliance at the exit meeting.

(4) Status of Licensee's Response to IE Bulletin 75-04 and 75-04A

The licensee's letter, dated April 18, 1975 (included as Attachment I to this report), has been received by IE:IV. The letter includes a schedule for completion of the licensee's review of each item.

(5) Other Fire Protection Requirements

(a) Separation of Nonessential Cable Associated with Test Program

The FSAR, Appendix C.3 (in response to 10 CFR 50, Appendix A, Criterion 3) states that "Redundant power, control, or instrumentation circuits are physically separated or protected to prevent damage, as a result of fire, ..." The FSAR, Question 7.4 states in part. with respect to essential cables in the cable spread-room, "... the cables are routed from the tray system to the control boards with a minimum separation of six inches between redundant circuits. Where this physical separation cannot be maintained, due to limited space, one cable is enclosed in asbestos zipper tubing to maintain segregation of the redundant circuits."

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Question 7.4 states further that with respects to nonessential circuits, "Nonessential circuits are routed in the same trays as essential circuits; ... and follow the separation criteria for essential cables in that tray or section."

The inspector, during a tour of the cable spreading room, noted several areas where temporary cable had been installed for the test program that did not meet the separation criteria stated above. As an example, in one area there were test cables which crossed within less than six inches of permanent redundant cables terminating in the Loop 1 and Loop 2 Coolant system instrument panels. Asbestos zipper tubing had not been installed.

The licensee concurred in the inspector's finding and stated at the exit meeting that separation in the cable spreading room was being reviewed. Some zipper tubing was installed prior to the completion of the inspection and additional zipper tubing was being ordered.

(b) Potential Flammable Material in Cable Spreading Room

10 CFR 50, Appendix A, Criterion 3, states in part that, "Noncombustible and fire resistant material shall be used whenever practicable throughout the facility, particularly in areas containing critical portions of the facility...". Further, the FSAR, Appendix C.3 (in response to Criterion 3 of Appendix A) states in part, "The facility is constructed making maximum practical use of noncombustible and fire resistant material."

The inspector, during a tour of the cable spreading room, noted approximately eight pieces of wooden plywood cabinets, tables, and stands associated with test equipment. Also, two wooden desks and a drawing/print file were noted. The inspector stated at the exit meeting that the introduction of flammable material in the cable spreading room was not consistent with 10 CFR 50, Appendix A. or the FSAR, Appendix C.

(c) Battery Room Door

The FSAR, Appendix C (in response to 10 CFR 50, Appendix A), states in part that, "Where the possibility of an explosion exists in redundant equipment, ..., suitable separation and/or missile shielding is provided to prevent an explosion in one unit from damaging the other".

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The inspector, during a tour of the 480 Vital Switchgear Room, found the door open to one of the two battery rooms.

The inspector stated at the exit meeting that leaving the battery room door did not assure adequate missile shielding or protection from fire/explosion.

3. Calibration/Surveillance Testing

a. Areas Inspected

The inspector verified that properly approved calibration/surveillance test procedures, as required by Technical Specification (TS), have been provided for the following areas:

PCRV Overpressure Safety System Surveillance Pressure Switch/Alarm (TS SR5.2.1(c)1)

Tendon Wire Surveillance (TS SR 5.2.2.a and b)

Control Rod Drive Surveillance (TS SR 5.1.1.a)

Calibration of PCRV Overpressure Safety System (TS SR 5.2.1(c)1)

Calibration of Reserve Shutdown System Low Pressure Alarm (TS SR 5.1.2.d)

The inspector verified that associated procedures contained (as appropriate) required prerequisites, test instrumentation, acceptance criteria, and operational checks prior to returning equipment to service for accomplishing the above required tests.

Current test results were reviewed by the inspector for conformance with Technical Specifications and for completion of reviews by the Licensee Supervisory personnel.

b. Inspection Findings

The inspector's review of this area is incomplete. Additional TS surveillance requirements will be reviewed at a subsequent inspection.

(1) TS Surveillance Procedure SR 5.1.2.bd

TS Surveillance Requirement 5.1.2(d) requires calibration once a year of reserve shutdown actuating pressure lines low pressure alarm and states, "Operable reserve shutdown hoppers shall have an actuating bottle pressure > 1500 psig."

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Contrary to this requirement, Surveillance Procedure 5.1.2.bd established alarm limits of 1500 ± 30 psig (which would allow alarm settings as low as 1470 psig) and further during the annual calibration performed 4/7/74, eight switches are recorded as less than 1500 psig (minimum 1490 psig). The inspector stated at the exit meeting that this item was considered an item of noncompliance.

(2) Temporary Changes

TS Administrative Control 7.5.e states that, "Temporary Changes to procedure prepared for a) and c) (1) above, which do not change the intent of the original procedures, may be made with the concurrence of a shift supervisor and one other person holding a senior operator's license. Such changes shall be documented and subsequently reviewed by the PORC. Final approval or disapproval will be by the Superintendent-Operations."

Contrary to this requirement, the inspector was informed that temporary changes (which do not result in permanent changes) to surveillance procedures are not reviewed by the PORC or approved by the Superintendent-Operations. Further, the inspector found no record of prior approval, by a shift supervisor and one other licensed senior reactor operator, of Temporary Changes. The inspector found that Surveillance Test Procedure 5.2.2.a-X, Tendon Wire Surveillance, contained temporary changes to steps 10 and 16 for the 12-13-73 test that were not processed as required.

(3) Review of Surveillance Test Procedures

The inspector found that the Plant Operations Review Committee (PORC) minutes do not indicate PORC review of the initially issued Surveillance Test Procedures, from time of licensing until 12/10/74, as required by TS AC 7.5.d, which states in part, "Procedures prepared for a) and c)(1) above shall be reviewed by the Plant Operations and Review Committee." The licensee did demonstrate that (during the December 10, 1974 PORC meeting #45) review of the surveillance test procedures was conducted and documented. The licensee did state that prior review of surveillance test procedure by the PORC (as a body) had not occurred; but, the licensee did demonstrate that the review and approval signatures on each surveillance test procedure are within one of the required quorum (TS AC 7.1.2.c - three members plus the chairman or designated alternate).

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This item is identified as an item of noncompliance for which no response is required based on the subsequent PORC review of the Surveillance Test Procedures.

4. Audit Records (Reference IE:IV Inspection Report 50-267/75-02)

The Technical Specification (TS) AC 7.1.3.d.4 states that the Nuclear Facility Safety Committee responsibilities include, "Conduct audits no less than semiannually of facility operators for compliance with internal rules, procedures, regulations, and license requirements, including Technical Specifications", and TS AC 7.1.3.d.7 states that, "Follow-up action, including re-audit of deficient areas, shall be taken as required."

Contrary to the above requirements, the inspector did not find that audit schedules have been established, or audits conducted by the NFSC as required.

The inspector did discuss with the licensee the interfacing of the NFSC and the licensee's QA Organization as it relates to the performance of the TS prescribed audits.

This item was identified at exit meeting as an item of noncompliance.

5. NFSC Review of Proposed Tests and Experiments (Reference: IE Inspection Report 50-267/75-03)

Technical Specification (TS) AC 7.1.3.d.12 states that it is the responsibility of the NFSC to, "Review proposed tests and experiments and their results."

Contrary to the above requirement, the inspector was informed by the licensee personnel that the NFSC reviews only those tests or experiments considered to be safety significant. The licensee has stated his intent to amend this TS requirement, but a proposed change has not been submitted.

The inspector identified Gulf Atomic RT 320 (dated 12/20/74) which requested a test to investigate the count rate response of the start-up channels with the detectors wrapped with Cadium, as an example. This test, although it involved safety related instruments, was determined by the PORC to be nonsafety significant and therefore, not subject to NFSC review prior to conducting the test.

The inspector stated, at the exit meeting, that although it was licensee's intent to submit a proposed change, this item was considered an item of noncompliance with the TS.

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6. Plant Status

a. B Series Testing

B Series Testing has been complete through Sequence 7. The licensee has stated that additional testing will require increasing power beyond the present 2% limitation. The licensee indicated that the following problem areas have been identified during the testing program:

(1) PCRV Cooling

At a core outlet temperature of 530°F, ΔT temperatures across the PCRV Cooling Coils of approximately 30°F, have been experienced in individual cooling coils associated with the top head and CRD penetrations. The licensee states that the average of the outlet versus the inlet is within the 20°F ΔT allowed by TS 4.2.15.c.

(2) Load Cells

Acceptance criteria for tendon relaxation is being reviewed against current load cell data. The licensee stated that a possible problem may exist with respect to two load cells.

b. Equipment

(1) Backup Bearing Water System

The licensee has placed a hold on testing beyond 2% pending the resolution of problems experienced during testing the back-up bearing water system. (UE 50-267/75-05). The licensee stated that possible interplay between the two primary coolant loops is being investigated.

(2) Purification System

Trouble has been experienced in the secondary side of the gas to gas heat exchanges with condensation of moisture. The source of moisture condensation has been traced to a period of time concurrent with the moisture ingress into the PCRV. Possible modifications to this system are being reviewed from the aspect of being able to decrease the time required to dry the system out.

7. Indication of Possible Pelton Cavity Flooding

The inspector confirmed, during discussions with plant and vendor personnel, that entry of bearing water into the steam turbine cavity and piping is predictable during self turbining and during pelton

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operation with the Nitrogen Pressurizing System shutdown. The licensee stated that the bypass around the steam turbine cavity steam trap is manually opened during these periods of time. The effects the steam trap has on the operation of the Nitrogen Pressurizing System, with respect to pressure equalization between the Pelton Cavity and its associated drain system, remains unresolved. The licensee stated that float type steam trap is being considered.

8. Abnormal Occurrence Report - AO 75-07/7A "Moisture Ingress and Reactivity Anomaly" (Reference IE Inspection Report 50-267/75-03)

Status of licensee corrective action with respect to AO 75-07/7A is as follows:

a. Moisture Drain Pots/Level Alarm Buffer/Mid-Buffer Instruments

The inspector verified completion of the installation of the moisture drain pots for the buffer/mid-buffer instruments and associated alarms per Field Change Notice (FCN) 2624/Work Authorization (WA) 1780 on 3/17/75. The inspector also verified completion of cold construction testing (CCT) by the licensee's electrical maintenance and results testing personnel. Cold construction testing includes verification of alarm function and calibration.

b. Remote Set Point Control for the High Pressure Separator Flow Controller

The licensee stated that material delivery is scheduled for 5/8/75. This item is incomplete.

c. Knock-out Pot for Buffer/Helium Dryers

The inspector verified completion of the installation of the knock-out pot for the Buffer/Helium Dryers per FCN 2628/WA 1784, Revision A, on 3/17/75. The inspector also verified completion of CCT. The inspector found that contrary to 10 CFR 50, Appendix B, Criterion XII, CCT did not include a verification of level switch calibration; however, a calibration was performed subsequent to the inspector's finding and prior to the completion of this inspection. The licensee stated, during the exit meeting, that this instrument alarm is not considered to be a Class I instrument per the definition of the FSAR, Section 1.4.4 and therefore, is not required by the licensee's QA program to require calibration. The inspector stated at the exit meeting, this matter would be reviewed further. In a subsequent phone call on 4/29/75 to the licensee's QA personnel, the inspector stated that an instrument may be considered safety related and not be seismic. The inspector also stated that although the licensee had taken action with respect to this single item, it appeared that there may be a generic problem with calibration of safety related instruments.

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d. PCRV/Surge Tank Δp Indication

The licensee has stated that material delivery is scheduled for 5/15/75.

This item is incomplete.

e. Level Indicators and Hi Level Alarms/Pelton Turbine Drain Cavity

The inspector verified the completion of the installation of the Pelton Turbine Drain Cavity per FCN 2587, Revision A/WA 1677A on 3/15/75. The inspector verified the completion of CCT.

f. Modification and Procedure Change/Drain Valve Pelton Cavity

The inspector was informed by the licensee that during evaluation of this item it was determined that opening of the drain valve provided only a limited flow path for leakage. The licensee stated that in place of this modification, the main Pelton Cavity outlet isolation valve control circuitry is to be modified to allow leaving this valve open during shutdown or self turbining, and that SOP 21-02 would so be revised. Material delivery is scheduled for 5/8/75.

This item is incomplete.

g. Review with Operating and Staff Personnel

The inspector verified that a training session had been conducted on 3/18/75 as committed in AO 75-07A for Shift Supervisors, Reactor Operators and Assistant Reactor Operators.

9. AO 75-03/3A "Failure of Moisture Monitors to Trip at Safety System Setting" (Reference: IE Inspection Report 50-267/75-03)

Status of corrective action with respect to AO 75-03/3A is as follows:

a. EG&G 440 Moisture Monitors

The licensee stated that the EG&G 440 moisture monitors are on order. Delivery was estimated to be 2-3 weeks.

This item is incomplete.

b. Heat Trace of Sample Line

Installation is in progress. The inspector did find that performance of Cold Construction Testing (CCT) was indicated

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as not being required on the Field Change Notice/Work Authorization located in the Control Room. The licensee stated at the exit meeting that CCT will be performed.

This item is incomplete.

c. Technical Specification Change

The licensee has submitted a revised Technical Specification (TS) by letter dated 4/11/75 to Division of Reactor Licensing. The licensee stated that the intent of the TS is to assure that sample line temperature does not prevent a moisture monitor safety system trip.

This item is incomplete.

d. Procedure Completion

The Standard Operating Procedure SOP-23 has been revised to include the analytical method for determining the moisture concentration in the primary coolant system as described in AO 75-03A.

The inspector was informed that the licensee is also developing an overall plant administrative procedure specifying responsibilities and detail actions in the event of moisture ingress.

This item is incomplete.

10. Review of Shift Logs and Operating Records

a. Current Operations

The inspector audited the Station Log and Operating Logs for completeness of entries including identification of abnormal conditions, and that log book reviews are being conducted by the plant staff. The inspector also audited the Operations Order Book, Temporary Change Request Forms and problem identification reports (Station Log Summary, Plant Trouble Reports, and Quality Assurance Deficiency Reports) to determine conformance with Technical Specification requirements. A plant tour and observations of housekeeping, monitoring instrumentation, alarm annunciator, operator personnel manning requirements, radiation controls, fluid leaks, piping vibrations, valve position, and equipment lockout tags were conducted by the inspector. Discussions were held with plant personnel regarding training. The conduct of plant tours by supervisory personnel was verified.

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The following administrative procedures were reviewed by the inspector during inspection of the above items:

ADM-06	Administrative Procedure for Use of Trouble Report Form
ADM-07	Administrative Procedure for Use of Radiation Work Permit (RWP)
ADM-08	Administrative Procedure for Use of Station Log Book - How to fill out
ADM-10	Administrative Procedure for Mechanical/Electrical Clearance
ADM-11	Administrative Procedure for Use of Radioactive Waste Release Forms
ADM-22	Administrative Procedure for Temporary Changes to Instruments (P&E)
ADM-24	Administrative Procedure for Operations Order Book
OP-05	Administrative Policy for Use of Operations Order Book
OP-06	Administrative Policy for Use of Log Sheets and Data Logger
QAI-10	Quality Assurance Deficiency Reports

b. Outstanding Items

(1) Temporary Change Requests

The inspector found that facility changes are being made by use of Temporary Change Requests (TCR/ADM-22). These temporary changes are not associated with an approved test or surveillance procedure. A safety analysis has not been performed in accordance with 10 CFR 50.59. Design control measures, in accordance with 10 CFR 50, Appendix B, Criterion III, were not apparent. ADM-22 (Administrative Controls for making temporary changes) requires authorization by the Plant Superintendent and approval by the Plant Electrician or Senior Results Engineer. Design control or safety analysis is not required. Example of TCR's are as follows:

(a) TCR 1-48

The Exhaust Air Damper pneumatic controls were modified on 1/21/75 following discovery that an Exhaust Stack High Radiation Trip closed the service building isolation damper only halfway.

(b) TCR 3-40

PPS circuitry was modified on 3/15/75 in that pin d on CC2A902 P11 (connector) was pulled to prevent

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HV 2204 (Pneumatic control associated with Main Feedwater Supply to Emergency Feedwater Header) from going open when power to the A logic train is secured during surveillance testing.

(c) TCR 3-54

Fill lines were installed on 3/23/75 to provide the ability to fill the constant leg of the Pelton Cavity level alarms (LIS 21494, 21495, 21496, and 21497).

(2) Temporary Procedure Change (Standard Operating Procedure (SOP) 42 Service Water System)

The inspector found that one entry in the Station Log Book for the 8-4 watch on 4/16/75 (Assistant Reactor Operators Narrative) stated that the Shift Supervisor directed that service water inlet temperature be lowered to 50-55°F. SOP 42, Step 2.3.1, requires that "The Service water inlet header will be maintained at 65°F, or as close as possible, year round." The inspector did not find that a temporary change had been processed as required by Technical Specification TS AC 7.5.e) (concurred by Shift Supervisor and Senior Operator, review by PORC and approval by the Superintendent). The licensee initiated a change prior to the completion of this inspection, the inspector stated at at the exit meeting that no reply to this item of noncompliance would be required.

(3) Auxiliary Logs

During the review of plant auxiliary logs, the inspector noted several incomplete log sheets. The summary of these is as follows:

Plant Protective System Log 1 and 2

4/8/75	Second and third shifts partially complete
4/10/75	Second shift incomplete
4/12/75	Second shift incomplete

Reactor Building Log 1

4/12/75	4 a.m., 8 a.m., 12 a.m., 4 p.m., 12 p.m., entries incomplete
4/13/75	8 a.m., 4 p.m., 8 p.m., 12 p.m., entries incomplete
4/14/75	8 a.m., 4 p.m., 8 p.m., 12 p.m., entries incomplete

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4/15/75	8 a.m., 4 p.m., 8 p.m., 12 p.m., entries incomplete
4/16/75	8 a.m., 4 p.m., 8 p.m., 12 p.m., entries incomplete
4/17/75	8 a.m., 12 a.m., 4 p.m., 12 p.m., entries incomplete
4/18/75	4 a.m., 8 a.m., 12 a.m., 4 p.m., 12 p.m., entries incomplete
4/19/75	8 a.m., 12 a.m., 4 p.m., 12 p.m., entries incomplete
4/21/75	4 a.m., 8 a.m., 12 a.m., 4 p.m., 12 p.m., entries incomplete

OP-06 Administrative Policy for use of Log Sheets and Data Logger states that "When any system or portion of a system is in operation, the log sheets provided shall be filled out in their entirety. For those data blocks provided for equipment not in operation, a "No" shall be recorded."

The inspector stated at the exit meeting that this was an item of noncompliance.

(4) Seismic Qualification of Reserve Shutdown System Helium Bottles

Contrary to Criterion III, Appendix B, 10 CFR 50, and the FSAR Appendix C, the inspector, during tour of the facility, identified that the Helium Bottles (37) associated with the reserve shutdown system were not apparently seismically restrained.

The licensee has initiated corrective action and the failure of the reserve shutdown system bottles to meet seismic requirement is to be reported as an Abnormal Occurrence in accordance with the Technical Specifications, Section AC 7.6.

The bottles were found by the inspector to be supported by a small chain with no support rack or other seismic restraints. Review of other bottles associated with Class I systems is being conducted and is considered unresolved by IE:IV. The failure of the shutdown system bottles to meet seismic requirements was identified at the exit meeting as an item of noncompliance by the inspector.

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(5) Nuclear Facility Safety Committee (NFSC) Review of Violations

The Technical Specifications (TS), Section 7.1.3.d.9, states in part that the NFSC is responsible to "Insure itself that it receives all information necessary for it to fulfill its obligations and responsibilities on a time scale such that it can take effective action." During the review of recent QA Deficiency Reports, the inspector found certain of these reports relating to violations of internal procedure are not being forwarded to the NFSC for investigation as required by TS, Section 7.1.

These include the following:

QADR 113

The licensee's QA organization identified violations of security and access control requirements.

QADR 116 and 117

The licensee's QA organization identified violations of Internal Work Procedure-1 relating to material control.

QADR 119

The licensee's QA organization identified violations of QA Procedure 1100 and Administrative Procedure ADM 14 relating to failure to provide calibration procedures for three of 16 Class I Instruments.

This item was identified at the exit meeting as an item of noncompliance with TS.

TABLE I

MAINTENANCE ACTIVITIES REVIEWED

	MAINTENANCE ACTIVITY	SOURCE OF INFORMATION	LCO MET	ADMIN APPROVAL	APPROVED PROCEDURE	INSPECTED	FUNCTIONAL TEST	QA RECORDS
1.	PCRV rupture disc replaced with dummy	Work Request 610 (MP 11-1)	Yes	No	No (1)	Yes	No (2)	No
2.	Repaired wiring error in accumulator circuit	PTR 2-200 (CN-20)	Yes	No	No	No (2)	Yes	No
3.	Cleaned orifice valve and seals in CRD's	Work Request 392 & 401 CWP 17, Rev 1	Yes	Yes	Yes	Yes	Yes	No
4.	Replaced CRD Penetration Connector	PTR 9-89	Yes	No	No (1)	No (2)	Yes	No
5.	Fuel Block Paint Removal	No maint doc avail	Yes	No	No	No (2)	NA	No
6.	Replaced valve PCV 11258 in reserve SD system	PTR 1-290	Yes	No	No	No (2)	Yes	No
7.	Rewired Electromatic Relief Valve 22168	PRT 12-95	Yes	Yes	NA	No (2)	No (2)	No
8.	Adjusted Trip Point of Power Range Channels #3 and #8	PTR 2-182	Yes	No	No	No (2)	Yes	No
9.	Replaced Coil and Relay in 1A PHC (Purification Compressor)	PTR 3-301	Yes	No	No	No (2)	No (2)	No
10.	Replacement of Porcelain Insulators in Connectors	PTR 10-89	Yes	Yes	Yes	Yes	Yes	No (3)
11.	Repaired Al Bus in LC 1A	CN-21	Yes	Yes	Yes	Yes	Yes	No
12.	D/G Trip Mechanism Inspection and Repair	Work Request 510	Yes	No	No	No (2)	No (2)	No
13.	Inspection of 480 V Breaker in Emergency Power Distribution	Procedure PME-9	Yes	Yes	Yes	No (2)	No (2)	No

	MAINTENANCE ACTIVITY	SOURCE OF INFORMATION	LCO MET	ADMIN APPROVAL	APPROVED PROCEDURE	INSPECTED	FUNCTIONAL TEST	QA RECORDS
14.	Replaced Contactor for D/G Hotstarts	PTR 11-322	Yes	No	No	No (2)	No (2)	No (3
15.	Replaced HEPA Filters	PTR's 2-19 and 4-95	Yes	No	No	Yes	Yes	No
16.	Modified Emergency Feedwater Control Logic	FCN-FSV-GA 2619	Yes	No	No (1)	No (2)	Yes	No
17.	Replaced Logic Board for Loop Shutdown Logic	Installation Instructions Logic Board Substitution	Yes	No	No (1)	No (2)	Yes	No (3
18.	Replaced Logic Board for Circulator Shutdown Logic	Installation Instruction Logic Board Substitution	Yes	No	No (1)	No (2)	Yes	No (3

(1) Procedure used, but not approved by Plant Superintendent (now call Superintendent, Nuclear Production) as per ADM-12.
(2) Licensee representatives indicated that these activities were inspected and tested, but no documentation exists to verify same.
(3) Only an equipment history card entry was made.

LEGEND FOR TABLE I

Symbol Used	Symbol Designation
Al	Aluminum
CN	Change Notice
CRD	Control Rod Drive
D/G	Diesel Generator
FCN	Field Change Notice
LC	Load Center (Electrical)
LCO	Limiting Conditions for Operation
PCRV	Prestressed Concrete Reactor Vessel
PTR	Plant Trouble Report
QA	Quality Assurance
SD	Shutdown

U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
REGION IV

IE Inspection Report No. 50-298/75-07 License No. DRP-46

Licensee: Nebraska Public Power District Category B2

Facility: Cooper Nuclear Station Docket No. 50-298

Location: Nemaha County, Nebraska

Type of Licensee: BWR-2381 MWt - 778 MWe

Type of Inspection: Special, Announced

Dates of Inspection: May 5-7, 1975 and May 16, 1975

Dates of Previous Inspection: March 17-19, 1975

Principal Inspector: J. E. Gagliardo, Reactor Inspector 5/28/75 Date

Other Accompanying Personnel: None

Reviewed By: G. L. Madsen, Chief, Reactor Construction and Operations Branch 5/28/75 Date

SUMMARY OF FINDINGS

Enforcement Action

A. Noncompliance Items

1. Violations

None

2. Infractions

(a) Contrary to Criterion V, Appendix B, 10 CFR 50, and Amendment 15 to the licensee's FSAR, six (6) discrepancies with the cable separation criteria and one discrepancy involving the use of combustible materials in fire barriers for cable runs were found. (DETAILS, Sections 1.b and 1.c)

(b) Contrary to TS 3.2.B, time delay relays MS-TDR-K5A and MS-TDR-K5B in the ADS logic system failed to actuate within the setting limits of the above specification. The licensee reported this item in AO Report No. 50-298-75-10. (DETAILS, Section 5)

(c) Contrary to TS 3.7.B.1, the Standby Gas Treatment system was not operable at rated flow conditions on March 22, 1975. The licensee reported this item in AO Report No. 50-298-75-11. (DETAILS, Section 5)

3. Deficiencies

None

B. Safety Items

None

Licensee Action on Previously Identified Enforcement Items

Not inspected

Design Changes

None

Unusual Occurrences

None

(continued)

Other Significant Findings

A. Current Findings

1. Deviations

None

2. Unresolved Items

7507-1 Written Policy on Electrical Cable Seal Testing

The licensee has no written policy (or procedure) to require that the review of maintenance and modification activities will assure the installation (or reinstallation) and testing of electrical cable seals. (DETAILS, Section 1.a)

7507-2 Written Policy Limiting the use of Open Flames or Ignition Sources

The licensee has no written policy (or procedure) which prohibits the use of open flames or ignition sources for leak testing. (DETAILS, Section 1.a)

7507-3 Written Policy to Defer Maintenance Until Shutdown Periods

The licensee has no written policy (or procedure) which provides guidance on deferring, until a shutdown period, any maintenance, construction and modification work which might affect the safety of the plant or its ability to shutdown and cooldown. (DETAILS, Section 1.a)

7507-4 Written Policy for Considering the Affects of Nearby Cabling and Piping

The licensee has no written policy (or procedure) which establishes the attention to be given to affected and nearby cabling and piping during maintenance and modification activities. (DETAILS, Section 1.a)

7507-5 Control of Combustible Materials

Controls have not been established in Procedure 1.6.8 for several types of combustible materials which are frequently found in the plant. (DETAILS, Section 1.a)

7507-6 Written Policy on the Use of a Monitor in Areas Adjacent to Work

The licensee has no written policy (or procedure) which provides guidance as to when a monitor will be stationed in areas adjacent to maintenance or modification work. (DETAILS, Section 1.a)

(continued)

7507-7 Use of Water on Electrical Fires

The licensee's fire fighting procedures do not address the fact that water may be used as the ultimate suppression medium for electrical fires of sufficient intensity. (DETAILS, Section 1.a)

7507-8 Fire Barriers in Reactor Building

The licensee has not installed, nor does he plan to install, fire barriers in the numerous cable penetrations between floors in the Reactor Building. (DETAILS, Section 1.b)

7507-9 QA Refresher Training

Records of QA refresher training were not available to the inspector during the inspection. (DETAILS, Section 6)

7507-10 Minimum Qualifications for QA Personnel

Minimum qualification requirements have not been established for QA Department personnel. (DETAILS, Section 6)

B: Status of Previously Reported Items

1. Deviations

Not inspected

2. Unresolved Items

7414-1 Implementation of Operator Requalification Program

The licensee has administered the annual comprehensive examination; completed the operator performance evaluations; reviewed abnormal and emergency procedures with all operators; and established a long-range training plan. This item is closed. (DETAILS, Section 6.a)

Management Interview

An exit interview was conducted with Mr. L. C. Lessor on May 7, 1975 and with Mr. K. L. Meyer on May 16, 1975. The following individuals were also present at the May 7 exit interview:

K. L. Meyer, NPPD
R. E. Wilbur, NPPD
B. Murray, NRC

(continued)

Mr. L. C. Lessor was also informed of the findings of the May 16, 1975 inspection during a telephone conversation with the inspector on May 17.

The following topics were discussed during the May 7 exit interview (significant comments by the inspector and/or licensee representatives are noted where applicable):

1. Licensee's Response to IEB 75-04 and IEB 75-04A

   The inspector restated his concern about the lack of specific written guidance for reviewing maintenance and modification activities. The licensee representative stated that he did not believe such written guidance was necessary. The inspector said that this item would be identified as an unresolved item.

2. Fire Barriers and Cable Separation for Electrical Cables

   The inspector outlined the scope of this inspection effort and pointed out the discrepancies which were found. The inspector said that these items would be identified as deviations from FSAR commitments. The licensee representatives stated that the foam material would be removed from the cable tray penetrations and the cable separation discrepancies would be corrected. They noted that the discrepancies which were most accessible would be corrected as soon as possible, but the discrepancies which were not readily accessible would be deferred to the next scheduled outage of significant duration. The licensee representatives also stated that they did not believe the fire barriers in the cable runs of the Reactor Building were necessary and did not plan to install same. The inspector said that this item would be identified as an unresolved item and would be referred to his management for resolution.

3. Operations at Reduced Power Levels

4. Status of Power Ascension Testing

   The inspector noted the tests which had not been completed or reported. The licensee representative said that these tests would be closed out by a revision to Startup Report - Supplement II which would be submitted by May 15, 1975.

5. Followup on IEB 75-03

6. Training

   The inspector stated that refresher training in QA had not been given to supervisory personnel within the required two year interval following initial training. The licensee representatives said that they thought that the refresher training had been conducted and would try to locate the records of the training. (In a subsequent telephone

(continued)

conversation, a licensee representative said that the refresher training had been conducted and the records of this training were available for review. The inspector said that he would identify this item as an unresolved item pending his review of the training records indicated.)

7. Changes in Key Personnel

The licensee representative informed the inspector that Mr. R. Clark (Shift Supervisor) had terminated employment and Mr. R. D. Creason, formerly a Unit Operator, had been promoted to Shift Supervisor.

The following topics were discussed during the May 16 (and May 17 telephone conversation) exit interview:

1. Cable Separation in the Reactor Drywell

The licensee representative acknowledged the discrepancies found during the inspection in the drywell and stated that these items could not be corrected until an extended outage period. The inspector said that this item would be identified as a deviation from FSAR commitments.

2. Battery Room and Vital Switchgear Ventilation

On May 20, 1975, the inspector informed the licensee in a telephone conversation with Mr. K. L. Meyer that the six discrepancies in the cable separation and the discrepancies involving the combustible material in the fire barrier has been identified as an item of non-compliance with Criterion V, Appendix B, 10 CFR 50 and would be reported as an infraction.

(continued)

REPORT DETAILS

List of Personnel Contacted

Nebraska Public Power District (NPPD)

L. F. Bednar, Electrical Engineer
K. L. Berrett, Site Manager
R. Brungardt, Shift Supervisor
R. D. Creason, Shift Supervisor
W. F. Gilbert, Training Coordinator
H. M. Green, Acting Quality Assurance Supervisor
M. E. Halkens, Instrument Technician
G. R. Horn, Shift Supervisor
H. A. Jantzen, Instrument & Control Supervisor
A. N. Kugler, Engineering Supervisor
L. C. Lessor, Station Superintendent
K. L. Meyer, Assistant Station Superintendent
D. Norvell, Electrical Foreman
C. R. Noyes, Maintenance Supervisor
J. L. Peasley, Shift Supervisor
R. O. Peterson, Assistant Reactor Engineer
R. W. Seir, Quality Assurance Specialist
J. R. Sheely, Administrative Supervisor
J. E. Stresewski, Reactor Engineer
P. V. Thomason, Operations Supervisor
R. E. Wilbur, Chemistry & Health Physics Supervisor
M. G. Williams, Shift Supervisor

Burns and Roe, Inc.

J. Bowles, Assistant Resident Construction Manager
T. Hayes, Job Engineer
L. Howell, Civil Engineering Supervisor
G. Larson, Electrical Job Engineer

Subjects Inspected

1. Cable Fire Prevention

   a. Licensee's Response to IE Bulletins 75-04 and 75-04A

   On March 25, 1975 the NRC Office of Inspection and Enforcement (IE) issued IE Bulletin (IEB) No. 75-04, entitled "CABLE FIRE AT BROWNS FERRY NUCLEAR POWER STATION". This bulletin provided licensees with preliminary information concerning a fire which occurred on March 22, 1975 at the Tennessee Valley Authority's Browns Ferry site. The bulletin also requested the following actions of selected licensees:

(continued)

1. "Review your overall procedures and system for controlling construction activities that interface with reactor operating activities, with particular attention to the installation and testing of seals for electrical cables between compartments of the reactor building, e.g., control room to cable spreading room.

2. "Review the design of floor and wall penetration seals, with particular attention to the flammability of materials.

3. "Evaluate your procedures for the control of ignition sources which may be used for leak testing or other purposes in areas containing flammable materials.

4. "Report to this office, in writing within 20 days of the date of this Bulletin, the results of your reviews or evaluations regarding items 1 through 3 above."

Cooper Nuclear was not one of the selected licensees requested to take action under IEB 75-04 at the time it was first issued.

On April 3, 1975 the Office of Inspection and Enforcement issued IEB 75-04A (same title as that of 75-04) which provided additional information concerning the Browns Ferry fire. IEB 75-04A required all licensees to carry out the actions requested in IEB 75-04 and outlined additional actions to be taken by licensees as follows:

1. "Because the occurrence appears to have resulted from modifications being made to an operating unit, all power reactors with operating licenses should address the actions requested in Bulletin 75-04 as well as the actions described below.

2. "Review your policies and procedures relating to construction or maintenance and modification work to assure that activities which might affect the safety of a unit in operation, including the ability to shut down and cool the unit are properly controlled. Your review should consider particularly your policy on deferring construction, maintenance or modification work on a unit until a shutdown period except for emergency maintenance vital to continued safe operation or safe shutdown of the unit.

3. "Review your policies and procedures to assure that for construction or modification and maintenance activities during plant operation, particular attention is given to the following areas:

   "a) The degree of safety significance of affected and nearby cabling and piping.

   "b) The use and control of combustible materials.

(continued)

"c) The use and control of equipment that may be an ignition source.

"d) The assignment of personnel, knowledgeable of plant arrangement and plant operations, whose sole temporary responsibility is monitoring the safe performance of construction or maintenance and modification work, including attention to otherwise unattended areas adjacent to the work areas.

"e) Provision of installed or portable equipment to provide the monitoring personnel with prompt communication with the operating staff in the control room.

"f) Provision of adequate fire prevention and fire suppression equipment, installed or portable, for the following locations:

"(1) Areas where work is being performed.

"(2) Areas where occurrence of a fire has high safety significance, even though the probability of occurrence is relatively small.

"g) Recognition that a fire, even one involving electrical equipment, may, if of sufficient intensity require water as the ultimate suppression medium.

4. "Review your emergency procedures to assure that consideration for alternate methods of accomplishing an orderly plant shutdown and cooldown are provided in case of loss of normal and preferred alternative shutdown and cooldown systems for any reason (e.g. a fire). In this connection, assure that the minimum information necessary to assist the operators in such shutdown actions, the minimum protection system actions required (e.g. scram) and the spectrum of alternative paths available to the operators to supply cooling water and remove decay heat dependent on plant conditions are included in your emergency procedures.

5. "Report to this office, in writing, within 20 days of the date of this Bulletin, your schedule for review in each of the above areas.

6. "Upon completion of your review, provide this office with the results of these reviews and the schedule for accomplishment of any revisions to your policies and procedures, and any proposed changes to the facility, and the date by which the changes are scheduled to be completed. If this latter date is more than 30 days after the date of the initial report, provide a monthly summary report detailing your progress in the review and/or proposed procedure or facility modifications. Reports requested

(continued)

by Bulletin 75-04 may be incorporated with the initial response to this Bulletin."

The licensee's initial response 1/ to the above bulletins was submitted within the specified time period. The licensee's response letter presented their position and proposed action for each of the items of action outlined in the two bulletins.

During this inspection, the inspector reviewed the actions taken by the licensee and discussed with several licensee representatives the positions taken by the licensee on those items for which no specific action is indicated. The licensee's response to and their actions taken for each of the items of action requested in the subject bulletins are summarized below.

In response to Item 1 of the action requested of licensees in IEB 75-04, the licensee stated that they had reviewed their procedures for controlling construction activities and believed them to be adequate. The inspector found that the procedure which the licensee has for controlling construction activities is Administrative Procedure 1.7 entitled, "Station Maintenance". The primary construction activities currently underway at the Cooper Station are performed by employees of Burns and Roe, Inc. who are constructing the Augmented Radwaste Facility which is adjacent to the existing Radwaste Building. By letter dated April 18, 1975, NPPD (K. Meyer) advised Burns and Roe (J. Bowles) of their responsibility to work within the procedural requirements of Procedure 1.7. This fact was acknowledged by letter dated April 25, 1975 from E. Kuchera (Burns and Roe) to K. Meyer.

Although Procedure 1.7 is acceptable for controlling construction activities in general, the procedure does not specifically address the installation and testing of seals for electrical cables between compartments of the reactor building.

This fact was discussed with licensee representatives who stated that attention to the installation (or reinstallation) and testing of seals for electrical cables would be assured by the engineering, quality assurance, and operations department reviews of maintenance activities required under Procedure 1.7. They felt that this was an unwritten policy for personnel in the above departments and that specific written guidance was not necessary. The lack of specific guidance in this area was identified as an unresolved item.

In response to Item 2 of IEB 75-04, the licensee indicated that high and low density cellular concrete had been used to fill penetration openings and urethane foam painted with fire retardant intrumescent paint had been used to fill smaller holes and the ends of conduit. This fact was generally corroborated by the inspector. Details of the inspection of penetration seals is contained in part b of this section.

(continued)

1/ NPPD letter Jay M. Pilant to E. M. Howard, dated April 23, 1975.

The licensee's response to Item 3 of IEB 75-04 indicated that they had evaluated their procedures for the control of ignition sources. They stated that they do not use an open flame or an ignition source for leak testing and that their procedure entitled "Hazardous Material Control" will reduce the probability of fires in areas containing flammable materials. This procedure was reviewed in detail during this inspection. The results of this review are discussed under Item 3.b to IEB 75-04A. The fact that the licensee does not use an open flame or an ignition source for leak testing is an unwritten policy. The licensee representatives interviewed did not feel that a written policy or procedure was necessary to prohibit the use of open flames or ignition sources in leak testing. They felt that the supervisors who review maintenance and modification procedures were aware of this policy and would prevent the use of open flames or ignition sources. This item was identified as an unresolved item.

In responding to Item 2 of the action section of IEB 75-04A, the licensee stated that policies and procedures relating to construction, maintenance, and modification work have been reviewed and are considered adequate to assure that safety related activities are properly controlled. The licensee noted that Administrative Procedure 1.7 (Station Maintenance) and 1.13 (Station Design Changes) provide control of construction/maintenance and modification activities respectively. The inspector reviewed these procedures and found that they were acceptable for the general control of these activities, but no specific guidance was given in either procedure concerning a policy of deferring the above activities (except for emergency maintenance) unitl a shutdown period. The Malfunction/Work Request (MWR), established by Procedure 1.7 and used for all maintenance activities, does provide for the designation of a maintenance priority, but the priorities which may be selected to not include a "defer until shutdown" category. Licensee representatives indicated that it is Cooper Station's unwritten policy to defer (when possible) safety related maintenance until a shutdown period. They did not believe that a written policy or procedure to defer these activities was necessary. The absence of a written policy in this area was identified as an unresolved item.

In the licensee's response to Item 3.a of IEB 75-04A, they stated that, "The plant policies and procedures for reviewing the degree of safety significance of affected and nearby cabling and piping during construction, modification, or maintenance work are now considered adequate. By the implementation of MWR's and/or minor design change procedures for all required work, safe practices can be assured."

The procedures referred to in this response are Administrative Procedures 1.7 and 1.13. As noted in the above evaluations, these procedures provide acceptable guidance for the review and control of maintenance/construction and modification activities, but there exists no specific written guidance for the supervisory or other individuals

(continued)

who review these activities to assure that the review includes the degree of safety significance of affected and nearby cabling and piping. The licensee representatives interviewed did not believe that written guidance was necessary to assure this type of review. They were of the belief that all of the reviewers of maintenance and modification activities were cognizant of the potential hazards to cabling and piping during such activities and would consider these potential hazards during their review. The absence of specific written guidance in this area was identified as an unresolved item.

In responding to Item 3.b of IEB 75-04A, the licensee stated that "Procedure 1.6.8, Hazardous Material Control, provides for the safe use and storage of all combustible materials at CNS." The inspector reviewed procedure 1.6.8 and found that it did provide for the control of the following combustible materials:

(1) Gaseous hydrogen

(2) Acetylene

(3) Fuel gas

(4) Fuel oil

(5) Zirconium turnings, borings, filings, chips or dust

The inspector noted that the above procedure did not include controls for such additional combustible materials as:

(1) Lubricating oils

(2) Paint

(3) Wood and paper products

(4) Rags

Licensee representatives stated that these materials should also be controlled under Procedure 1.6.8. They indicated that Procedure 1.6.8 would be modified to provide controls for the above listed items. This item is identified as an unresolved item until Procedure 1.6.8 is modified.

In the licensee's response to Item 3.c of IEB 75-04A he stated that, "Procedures and policies concerning the use and control of equipment that might be an ignition source have been reviewed and are considered adequate."

The procedures which control cutting (torch) and welding operations are Administrative Procedures 1.7.3 (Cutting and Welding Permits) and 1.17 (Administrative Procedure for Special Process Control). The

(continued)

inspector reviewed these procedures and found them acceptable for the control of cutting and welding operations. As noted in the previous evaluations, the licensee has no written policy or procedure to control the use of open flames or other ignition sources for leak testing.

In responding to Item 3.d of IEB 75-04A, the licensee indicated that personnel knowledgeable of plant arrangement and operations would be assigned to monitor unattended areas adjacent to work only when there is a "probability of concern". The licensee's response stated that, "We believe that routine plant patrols adequately cover many of these areas." The inspector found that the above policy is unwritten as is the definition of the term "probability of concern". Licensee representatives interviewed in this area felt that a written policy was not necessary because the requirement for a full time monitor would be identified during the review of maintenance or modification procedures. This item was identified as an unresolved item.

The licensee's response to Item 3.e of IEB 75-04A stated that, "Procedure 2.2.4 provides for instruction on the use of the installed and portable communication equipment available at the plant. Sufficient equipment, both protable and installed, are available to provide monitoring personnel with prompt communications with the Control Room operating staff as required." The inspector reviewed Procedure 2.2.4 (Communications System) and the communications installation at the facility and found no discrepancies.

In response to Item 3.f of IEB 75-04A, the licensee stated that they had reviewed their fire protection system and consider it adequate to safeguard all areas of the plant. In Amendment No. 15 to the FSAR, the licensee responded to FSAR Question No. 7.4 with a detailed description of the fire detection and protection installations in the areas where safety related cables are installed. The fire detection and protection installations were to include:

(1) A dry pipe and pre-action sprinkler system in the Electrical Cable Spreading Room.

(2) A dry pipe and pre-action sprinkler system in the Reactor Building area above the Motor Generator Sets.

(3) A wet pipe automatic sprinkler system above the Motor Generator Set Oil Pumps and Motors.

(4) An automatic CO_2 system for each of the diesle generator rooms.

(5) Smoke detectors in the following critical areas.

(a) Computer room ceiling.

(continued)

(b) Auxiliary relay board room ceiling.

(c) D.C. switchgear room ceiling.

(d) Battery room ceiling.

(e) Reactor protection system MG set room ceiling.

The inspector toured the above areas and verified the installation of the above fire detection and protection equipment. The inspector also noted an ample number of wall mounted CO_2 hand extinguishers located throughout the above areas. The inspector also noted that smoke detectors had been installed in the reactor control room. No discrepancies were noted in this area.

In responding to Item 3.g of IEB 75-04A, the licensee noted that, "Fire fighting procedure 5.4 provides for instruction to personnel concerning the various types of fires and the required action of the plant personnel in response to a fire. It is recognized that a fire, even one involving electrical equipment may, if of sufficient intensity, require water as the ultimate suppression medium." Procedure 5.4 consists of a general fire procedure (5.4.1) and twenty-five (25) special fire procedures which provide guidance in fighting fires in many different areas throughout the plant. The inspector noted, however, that none of the procedures reviewed addressed the above stated policy that an electrical fire of sufficient intensity may require water as the ultimate suppression medium. In fact, a number of the procedures contained a statement to "avoid using water on electrical fires." The inspector discussed with licensee representatives this apparent conflict from their stated position (above IEB response) on the use of water on electrical fires. The licensee representatives stated that they would review this item further. This item was identified as an unresolved item.

In response to Item 4 of IEB 75-04A, the licensee stated that procedure 5.2.1 (Shutdown from Outside Control Room) was being revised to include local operation of core standby cooling systems and a new procedure 5.2.10 was being written to provide for flooding of the reactor core with service water. These procedure changes had not been completed as of the date of this inspection. This item remains open.

b. <u>Fire Barriers</u>

The primary objectives of this inspection were to:

(1) Examine the construction specifications of the facility to determine what requirements had been imposed for:

(a) Location and installation of fire barriers and compartment boundary seals for safety related cables.

(continued)

(b) Application and the extent of application of fire retardant coating for safety related cables.

(2) Examine maintenance and modification procedures to determine whether the requirements of (1), (a) and (b) above are invoked on a continuing basis.

(3) Visually examine the facility to determine the extent of conformance to the requirements identified above.

Construction Specifications on Fire Barriers

In Amendment No. 15 to the FSAR the licensee responded to FSAR Question No. 7.4 with the criteria for cable routing in containment, penetration areas, cable spreading rooms, control rooms and other congested or hostile areas. The licensee's response stated that for floor and wall openings in Fire Hazard Zones, "runs of NSSSS and ESS cables are sealed with fire resistant material." The construction specifications which satisfied this commitment are contained in page G-83 of Burns and Roe, Inc. Specification E.70-3 entitled, "Instruments and Control System Installation" and on Sheet 2 of Burns and Roe, Inc. Drawing No. 3136. It was noted that the original specifications called for the use of ceramic fiber, such as Babcock and Wilcox "KAOWOOL" (or approved equal), packed into the conduit or cable tray penetrations. This specification was subsequently changed to provide the following fire stop installation:

(1) High density or low density cellular concrete to fill floor and wall penetration openings around conduit and cable tray runs. The high density concrete was specified for use where radiation resistance and strength was necessary.

(2) Small holes and ends of conduit were to be filled with urethane foam. The exposed surfaces of the foam were to be painted with PPG #42-7 fire retardant intrumescent paint.

The construction specifications did not call for an application of fire retardant coating on safety related cables. The inspector reviewed, however, the qualification test report for the electrical cables used at the Cooper Nuclear Station. The qualification tests were conducted by the Franklin Institute Research Laboratories and the results reported in Report #F-C 2927, dated October 1970. The following tests were included in the qualification test program:

Heat Resistance Test
Irradiation and Post Accident Environmental Test
Cable Tray Fire Propagation Test
Dielectric Test

All of the cables tested were found to be acceptable.

(continued)

Maintenance and Modification Procedures

Modification and maintenance procedures were reviewed as part of the followup on the licensee's response to IE Bulletins 75-04 and 75-04A. The results of this review are detailed in Section 1.a of this report.

Visual Examination of Fire Barriers

The inspector toured the facility to visually examine and verify the installation of fire barriers in accordance with the construction specifications. The areas which were covered by this tour included:

(1) The Reactor Building (at elevation levels 903'-6", 931'-6", 958'-3" and 976'-0")

(2) Auxiliary Relay Room (elevation 903'-6")

(3) Reactor Protection System M-G Set Rooms 1A and 1B (elevation 903'-6")

(4) Battery Rooms 1A and 1B (elevation 903'-6")

(5) DC Switchgear Rooms 1A and 1B (elevation 903'-6")

(6) Cable Spreading Room (elevation 918'-0")

(7) Cable Penetration Room (elevation 918'-0")

(8) Reactor Control Room (elevation 932'-6")

(9) Computer Room (elevation 932'-6")

(10) Reactor Drywell (elevation 903'-6" and 942'-6")

The inspector found that, with the exception of the Reactor Building, all floor and wall penetrations had been sealed with the low density cellular concrete in accordance with the revised construction specifications. The inspector found that in several of the cable tray penetrations between the Cable Spreading Room and the Cable Penetration Room and the penetrations between the Cable Penetration Room and the Reactor Building small strips (approximately one inch thick and three inches wide) of a urethane foam material remained across the width of the cable tray. The inspector tested the foam material and verified that it was combustible, but the foam had not been painted with a fire retardant paint. The strips of foam had been used to seal the gaps between the cables and the concrete forms used while the seals were poured. The foam strips had not been removed when the forms were disassembled. The foam strips are imbedded in the concrete seals to a depth of less than one inch.

(continued)

In discussing the foam strips with licensee representatives, the inspector noted that the exposed surfaces of the foam strips which are not painted with fire retardant paint is contrary to the FSAR commitment which states that "runs of NSSS and ESS cables are sealed with fire resistant material" and to the revised construction specifications for fire barriers which required that all exposed surfaces and urethane foam be painted with PPG #42-7 fire retardant paint. This item is identified as an item of noncompliance with the requirements of Criterion V, Appendix B, 10 CFR 50, which states in part that "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures or drawings." A licensee representative stated that the foam strips would be removed. He said that the foam strips which are most accessible will be removed as soon as possible, but those strips which are not readily accessible will be removed during the next scheduled outage of significant duration.

During his tour of the Reactor Building, the inspector found that fire barriers had not been installed for several of the cable runs between floor levels of the building. The inspector pointed out this discrepancy to licensee and Burns and Roe, Inc. representatives and noted that Section C.2.d of the licensee's answer to FSAR Question No. 7.4 states that, "Floor and Wall Openings runs of NSSSS and ESS cables are sealed with fire resistant material". The inspector also noted that Burns and Roe, Inc. construction specification E.70-3 states (on page 6-83), "When all conduits have been installed, this contractor shall close up the openings throughout the entire plant." The inspector stated that the failure to provide fire barriers for all floor openings in the Reactor Building is an apparent deviation from the above FSAR commitment. The licensee and contractor representatives said that they did not agree with the inspector concerning the identification of these items as a deviation from the FSAR commitment. They noted that those barriers which had been installed in the Reactor Building floor openings were in the immediate area of the Recirculating Pump Motor - Generator (M-G) Set or the lube oil pumps and heat exchangers which service the M-G Sets. The licensee and contractor representatives said that these barriers serve to prevent M-G Set oil spills from running down the cable runs and are not fire stops. They noted that there are numerous pipe chases throughout the Reactor Building along with the open equipment hatch and elevator shaft which would not prevent a fire from propagating between floors. They said that since the other openings would not prohibit the propagation of a fire, fire stops in cable openings would serve no real purpose. On the basis of the above position, the licensee representatives said that they did not plan to install additional fire stops in the Reactor Building. The inspector said that he would identify this item as an unresolved item and refer it to his management for resolution.

(continued)

c. Cable Separation

In the licensee's response to FSAR Question No. 7.4, specific criteria for the separation of safety related cables was outlined to minimize the potential for fire damage to cables of redundant systems/ components. During his tour of the facility to verify the installation of fire barriers (Section 1.b), the inspector also observed the extent of compliance with the cable separation commitments made in the FSAR.

The inspector found that in general, the licensee's commitments had been met for:

(1) Horizontal separation of cable trays.

(2) Vertical separation of cable trays.

(3) Vertical separation of conduits.

(4) Separations within control panels and instrument racks.

The inspector found six (6) discrepancies in the area of cable separation. The discrepancies are:

(1) On the northeast end of the Reactor Building a Division I (C-82) and a Division II (C-99) cable tray run vertically from the 931'-6" elevation to the 903'-6" elevation with a horizontal separation of approximately eight (8) inches. The horizontal separation criteria of the above FSAR commitment has not been met for this cable run by the fact that the inside cover of the Division I tray is not solid metal.

(2) On the northeast corner of the Reactor Building, near the ceiling of the elevation 903'-6", a Division II cable tray crosses over a Division I cable tray with a vertical separation of less than eighteen (18) inches. The solid metal cover on the bottom of the Division II cable trays was apparently moved during installation exposing a gap of about one inch in width.

(3) On the east end of the Cable Spreading Room (elevation 918'-0") a terminal box (designation unknown) contains Division I and Division II cables which are properly separated within the box. The cables coming out of the box, however, are run in cable trays which parallel each other with a horizontal separation of less than six (6) inches for a length of about two (2) feet. A fire barrier has not been installed between the cable trays in accordance with the FSAR separation criteria.

(continued)

(4) On the northwest corner of the Cable Spreading Room a Division I cable tray crosses over a Division II cable tray and the metal cover over the Division II tray does not extend to five (5) feet on each side of the cross-over area as required by the FSAR commitment.

(5) In the Auxiliary Relay Room the Division II cable from the Division II relay cabinet are laid in a cable tray which runs west and then north and exits through the northwest area of the ceiling. The cable tray is installed in such a manner that it passes within a three (3) feet horizontal separation of the Division I cable tray which collects the cables from the Division I relay cabinet. No fire barrier has been installed between the two cable trays as required by the FSAR commitment.

(6) Two cable trays ring the Reactor Drywell with most of the runs being in the upper position of elevation 903'-6". The cable trays are designated C85 (Division I) and C84 (Division II) and are run with C85 above C84 with a separation of about one foot. In the horizontal runs, a solid metal tray has been installed on the top of C84, but no solid metal tray had been installed on the bottom of C85, as required by the FSAR separation requirements. In the vertical runs of the above cable trays the separation is still about one foot, but no fire barrier had been installed between the cable trays which is contrary to the FSAR separation requirements.

The inspector told licensee and contractor representatives that the above discrepancies were contrary to the licensee's commitment in the FSAR. The inspector pointed out the first five discrepancies to several licensee and Burns and Roe, Inc. representatives who acknowledged that the discrepancies were contrary to the FSAR commitment. The discrepancies in the drywell were pointed out to the licensee representative who accompanied the inspector into the drywell. The inspector did not determine if construction specifications exist to satisfy the FSAR cable separation requirements. The above discrepancies imply that either an adequate specification had not been prepared or that the specification had not been followed. In either case the above discrepancies constitute an item of noncompliance with Criterion V, Appendix B, 10 CFR 50, which is quoted in part in Section 1.b.

2. Operation at Reduced Power

On April 26, 1975 the NRC Office of Nuclear Reactor Regulation issued an Order for the modification of the Cooper Nuclear Station License (No. DPR-46) to limit the maximum core power level and the maximum core flow rate to 50% of design power and design flow rate. The order was issued on the basis of possible vibration of instrument tubes which is suspected by the anomalous readings from a transversing incore probe (TIP).

(continued)

The inspector reviewed the operating records of the facility and verified that core power and core flow were reduced to less than 50% on April 26. Core power and flow have not exceeded 50% since April 26. The licensee has informed all operating personnel of the power and flow limitations.

The licensee has begun a program of obtaining weekly TIP readings from all TIP positions. This program will enable him to monitor the core and detect any recurrent vibration indications. The inspector reviewed the TIP traces taken on May 2, 1975 at 48.6% power and 45.4% flow. No discrepancies were noted.

3. Status of Power Ascension Test Program

During this inspection, the status of the power ascension test program at the 100% plateau was reviewed in detail. The completed tests (listed below) which had not been previously reviewed by the inspector, were reviewed to verify that:

a. The test had been conducted at the power level and core flow conditions required by the FSAR.

b. The procedure used had been properly approved.

c. Indicated "hold" points in the procedure had been signed-off.

d. The results of the test conformed to the indicated acceptance criteria.

e. The test results had been reviewed by the Cooper staff and by the Startup Test Committee.

f. Deviations from the indicated acceptance criteria had been resolved in the review process.

The inspector also reviewed Startup Report - Supplement No. II, dated April 29, 1975, to verify that the test results reported were consistent with the startup test records. No discrepancies were found.

The following tests have been completed through the final review of the Startup Test Committee and have been accurately reported in the Startup Report:

Test No.	Test Title
STI-9	Water Level Measurement
STI-13	Process Computer
STI-18	Core Power Distribution
STI-19	*Core Performance
STI-20	Steam Production

(continued)

Test No.	Test Title
STI-22	Pressure Regulator Set Point Change
STI-23	*Feedwater System
STI-27	*Turbine Trip
STI-29	*Flow Control
STI-30	*Recirculation System
STI-34	*Vibration Measurements
STI-35	Recirculation System Flow Calibration
STI-72	Drywell Atmosphere Cooling System
STI-73	Cooling Water Systems

*The FSAR required that portions of these tests be run at flow and power conditions which the licensee believed to be unnecessary or undesirable. The tests were not conducted under these conditions. The licensee has reviewed these changes to the test program and reported same in Section III of Startup Report - Supplement II.

The above reviews were conducted during the part of the inspection held on May 5-7, 1975. The inspector noted that Test STI-16 (Selected Process Temperatures) had been completed and reviewed by the Startup Test Committee, but the test results had not been reported in Startup Report - Supplement II. A licensee representative said that the results of this test would be reported as a revision to Startup Report - Supplement II. The inspector also found that Test STI-24 (Bypass Valves) had not been conducted with natural circulation flow on the 100% load line (Condition 4A) as required by the FSAR program. The licensee representative said that they did not plan to run this test under condition 4A and would justify this test program change in the above revision to Startup Report - Supplement II.

When the inspector returned to complete the inspection on May 16, he was informed by a licensee representative that the revision to Startup Report - Supplement II had been issued on May 14, 1975 and was entitled "Startup Test Program, Attachment A to Supplement II". The inspector reviewed this document and found that the results of Test STI-16 had been accurately reported and that the test program change to eliminate condition 4A from Test STI-24 had been justified. The inspector found no discrepancies with this document.

The licensee has conducted all of the tests required by the FSAR test program or has justified program changes in his Startup Reports. All of the test results have been reviewed by the Startup Test Committee (STC) and have been accurately reported in the Startup Reports. Deviations from the indicated acceptance criteria have been reviewed and resolved by the STC and have been reported in the Startup Reports. A licensee representative said that they believe the requirements of the Startup Test Program have been completed and that the licensee will begin inerting the drywell (as required by TS) after the startup which follows the current outage period. The inspector said that he concurs with the licensee's position on the completion of the Startup Test Program and the requirement to begin drywell inerting when reactor operation resume.

(continued)

4. Followup on IE Bulletin 75-03

On March 14, 1975, the NRC Office of Inspection and Enforcement (IE) issued IE Bulletin (IEB) No. 75-03 entitled "INCORRECT LOWER DISC SPRING AND CLEARANCE DIMENSION IN SERIES 8300 AND 8302 ASCO SOLENOID VALVES". The bulletin advised licensees of recent abnormal occurrences at two power reactors in which safety related solenoid air-pilot valves manufactured by Automatic Switch Company (ASCO) failed to operate properly. The bulletin further described the types of ASCO valves which have failed and the apparent cause for the failures. Licensees were advised to contact the ASCO valve service department in case of uncertainty. The bulletin outlined the following action to be taken by all power reactor licensees with operating license or construction permit:

1. "Determine if ASCO valves of the types described above are in use or palnned for use in safety related systems..

2. "Report to this office in writing, within 30 days for facilities with operating license and within 60 days for facilities with construction permit, the results of your findings with regard to Item 1.

3. "If solenoid valves of the types described are in use or planned for use in safety related systems, include in your written reply the actions you have taken, or plan to take, to prevent failures of the type described above. Your written reply should also include the date when such actions were, or will be, completed."

The licensee's reply 2/ to IEB 75-03 indicated that they did not have any of the specified series of ASCO solenoid valves in their safety related systems. They did note, however, that four of the ASCO Series 8302-C form U solenoid valves were installed to control fan dampers in the drywell ventilation system and several of the series 8302-C from RU valves are installed in the Augmented Radwaste Building Systems. They further noted that they had been in contact with the manufacturer (ASCO) and planned to follow ASCO's recommendations on the actions taken.

During this inspection, the inspector reviewed the corrective actions taken by the licensee relative to the above ASCO valves. The licensee had contacted the ASCO valve service department and had received additional information 3/ on the previous failures of these valves and the actions to take to prevent further failures.

The ASCO letter also included a detailed list of the specific catelog numbers for all of the solenoid valves subject to the type of failure noted in the bulletin. The letter also enclosed a maintenance instruction sheet (ASCO I&M Sheet U-5503) which outlines the procedure to check and adjust the solenoid valves.

(continued)

2/ NPPD letter, Jay M. Pilant to E. Morris Howard, dated April 14, 1975.
3/ ASCO (L. H. Cason) letter to NPPD dated April 9, 1975.

The licensee had completed the inspection of the seven (four in drywell ventilation system, and three in radwaste systems) solenoid valves of the types listed in the ASCO letter. This inspection verified that the lower valve disc clearance was in the range of 0.008 to 0.016 inches as required by the ASCO instructions. Two of the valves in the radwaste system have resilient seats. The licensee had ordered the conversion kits that will convert the valves to provide metal-to-metal seating surfaces. The licensee anticipated receiving the conversion kits and modifying the valves before May 15, 1975. Since these valves are not safety related, no additional followup will be made on the above conversions. This item is closed.

5. Abnormal Occurrence (AO) Report Follow-up

Abnormal Occurrences 75-10 through 75-12 were reviewed during this inspection and the findings are summarized in Table I. The inspection effort was directed at verification that:

a. The details of the event were clearly reported in the 10-day letter;

b. the cause was identified;

c. the corrective action indicated in the 10-day report had been taken;

d. the event and the indicated corrective action was reviewed and evaluated in accordance with the technical specifications;

e. the event did not violate a safety limit, limiting safety system setting or limiting condition for operation.

No discrepancies were noted and the above abnormal occurrences are considered closed.

6. Training Activities

The licensee's training records were reviewed to verify that training and retraining of licensee personnel have been accomplished in accordance with NRC requirements and licensee commitments. The training areas reviewed and the inspector's findings are discussed below.

a. Operator and Senior Operator Requalification Program

During the inspection of October 30 through November 1, 1974, the inspector reviewed the actions that the licensee had taken to implement the Operator and Senior Operator Requalification Program which had been approved by the AEC Directorate of Licensing on January 17, 1974. The inspector found that the requalification program had not been fully implemented, and this item was identified as Unresolved Item 7414-1.

(continued)

During the inspection of February 10-12, 1975, the inspector again reviewed the licensee's activities under the requalification program. The inspector found that some progress had been made toward full implementation of the requalification program but that the following items remained unresolved:

(1) Scheduling of the annual requalification exam.

(2) Performance evaluation of all licensed operators.

(3) Semiannual review of the emergency operating procedures.

(4) Long-range schedule and plan for the overall training program.

During this inspection, the inspector again reviewed the training activities under the requalification program. The licensee had administered the annual comprehensive exam to all but one licensed operator during the month of April. The one licensed operator who did not take the exam is a supervisor outside of the Operations Department who will probably not seek requalification but allow his license to expire. The licensee was in the process of grading the exams at the time of this inspection. A licensee representative discussed the tentative long-range schedule and plan for next year's training. He noted that this may be changed when the exams have been graded. The inspector reviewed the records of the performance evaluations of the licensed operators and the records of the review of abnormal and emergency operating procedures. No discrepancies were found and Unresolved Item 7414-1 is closed.

b. Quality Assurance (QA) Training

Quality Assurance Instruction QAI-6 entitled "PERSONNEL QUALIFICATIONS AND TRAINING FOR QA ASSIGNMENTS" establishes the requirements for the training and retraining of all licensee personnel assigned to perform QA activities for the Cooper Nuclear Station. QAI-6 requires that, "Cooper Nuclear Station supervisory personnel, responsible for operating or maintaining systems and equipment requiring Quality Assurance, shall receive formal instructions in Quality Assurance, including basic principles, 10CFR50 Appendix B, the contents of the NPPD policy document on QA for Operation, and the contents of specific Quality Assurance documents prepared to implement the QA Program for Operation."

QAI-6 also establishes the following requirements for the scheduling of the above training and the retraining of the above personnel: "Scheduling of personnel into the QA training sessions shall be coordinated so as to minimize conflicts with other work activities. However, all designated supervisors shall complete the first half of the program before plant start-up. The second half shall be completed within six (6) months.

(continued)

"Refresher QA training sessions will be incorporated into operator retraining programs and will be completed within the required two-year cycle."

During this inspection, the inspector reviewed the QA training records of the licensee. The initial QA training was conducted on December 11 and 13, 1972 for the first half of the program and April 10 and 11, 1973 for the second half. The training records did not, however, contain any records of refresher training nor were there any records of QA training for supervisory personnel who began employment after April 1972. The licensee's Training Coordinator stated that he was unaware of any retraining in the area of QA. The inspector was subsequently informed (telephone call on May 13, 1975) by a licensee representative that QA refresher training had been given in 1974 by the QA Supervisor. The inspector advised the licensee representative that this item would be identified as an unresolved item pending the inspector's review of the training records for 1974.

In reviewing the QA training activities and QAI-6, the inspector noted that Section 3.1, 3.2 and 3.3 of QAI-6 establish the qualifications and training requirements for the Manager, Licensing and Quality Assurance; Quality Assurance Engineer; and Quality Assurance Specialist, respectively. Each of these Sections refers to a different Attachment (B through D, respectively) which is to contain the minimum qualifications for each of the above positions. The Attachments B through D, however, contain no qualification information. Each qualification category (Education, General Experience, QA Experience, etc.) contains only the word "(Later)". The inspector asked a representative of the licensee's QA Department if the qualifications have been established. He said that they have been drafted and are in the process of being reviewed by management. The inspector identified this item as an unresolved item.

c. Security Training

The inspector reviewed the licensee's training activities relative to facility security procedures and access control. The initial training sessions were held on November 7, 8 and 9, 1973 and supplemental information was given on December 17, 1973 which included information on the AEC (now NRC) approved Security Plan. The licensee plans to schedule refresher training in the near future. No discrepancies were found in this area.

7. Battery Room and Vital Switchgear Ventilation

While reviewing the licensee's commitments on the installation of fire barriers for electrical cables, the inspector noted another potential fire problem which had been addressed in the FSAR. By FSAR Question No. 10.16 the licensee was requested to evaluate the potential problem in the battery room ventilation due to an archway which provided a potential for

(continued)

hydrogen accumulation and the fact that the battery room exhaust ventilation ducting and exhaust fan were to be located in the control room. The licensee's response to the above FSAR question indicated that the above areas of concern had been corrected by:

a. Modifying the duct work to extend to each archway in the battery room.

b. Installing fire dampers (which close on high temperature) in the exhaust ducting for each battery room and in the exhaust ducts in each critical switchgear room.

c. Installing a standby fan which will automatically start on the failure of the operating fan.

d. Replacing the battery room exhaust ducting in the cable spreading room and control room with explosion proof piping.

e. Installing the battery room exhaust fans in the corridor outside of the control room with the exhaust directed to the atmosphere through the roof.

The inspector examined the battery room and switchgear room (1A, 1B, 1F and 1G) ventilation installations. The modifications to the ventilation system had been made in accordance with the above commitments by the licensee. The fire dampers are of the fused-link type and had been installed to provide separation between the battery rooms and between the switchgear rooms. No discrepancies were found in this area.

TABLE 1

ABNORMAL OCCURRENCE FOLLOW-UP

AO Number	Subject	NCR No.	TS Viol.	Comments
75-10	ADS Timer s/p dft	520	Yes	Closed
75-11	SBGT Line Flow Reduction	523	Yes	Closed
75-12	RHR Riser dp switch s/p dft	524	No	Closed

Legend of Acronyms

ADS - Automatic Depressurization System
AO - Abnormal Occurrence
NCR - Nonconformance Report
TS Viol - Technical Specification Violation
s/p dft - Set point drift
SBGT - Standby Gas Treatment System
RHR - Residual Heat Removal System

U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report of Operations Inspection

IE Inspection Report No. 050-315/75-07

Licensee: American Electric Power Service Corporation
Indiana and Michigan Power Company
2 Broadway
New York, New York 10004

Donald C. Cook Nuclear Plant, Unit 1
Bridgman, Michigan

License No. DPR-58
Category: B

Type of Licensee: PWR, Westinghouse

Type of Inspection: Special, Announced

Dates of Inspection: April 24, and May 2, 1975

Dates of Previous Inspection: March 5, 10, 13, 19, 27, April 8, 9, 11, 1975 (RIP)

Principal Inspector: for K. R. Baker — 5/15/75 (Date)

Accompanying Inspector: None

Other Accompanying Personnel: None

Reviewed By: E. L. Jordan
Senior Inspector
Reactor Operations Branch — 5/15/75 (Date)

SUMMARY OF FINDINGS

Enforcement Action: None

Licensee Action on previously Identified Enforcement Matter

Not inspected.

Unusual occurrences

None.

Other Significant Findings

A. Current Findings

Licensee has submitted replies to IE Bulletins 75-04 and 75-04A. Reviews indicated actions in the licensee's replies are in progress. Certain cable tray penetration fire barriers and air seals were observed to be out of design specification. No immediate safety concerns were identified.

B. Unresolved Items

Repairs/modification to fire barriers and air seals to bring them into specification. (Paragraph 5, Report Details)

Management Interview

The following matters were discussed with Mr. Jurgensen, Plant Manager on April 24, 1975 and subsequent phone conversations:

A. The licensee stated that based upon the inspectors observation a complete detailed inspection of the areas required to be sealed would be made. (Paragraph 5, Report Details)

B. The License stated that rework by construction will be controlled. The adminstrative frame work is in place and functioning. The particular problem with the seals will be brought to construction attention.

C. Deficient seals will be repaired when a repair procedure is developed and approved. Seals which are deficient because of flammable backing material are being corrected by the removal of the material. (Paragraphs 4 and 5, Report Details)

D. The licensee stated that though some seals are out of specification they still will serve as a fire barrier and air seal. Also, even though seals may be missing in areas the ability to maintain a CO_2 atmosphere on these areas has been demonstrated.

E. The licensee stated that no "quick fix" was going to be done. The licensee will assure that the specifications are proper, proper materials will be used and that reviewed and approved procedures will be used so that the fix will not degrade the seal installations.

REPORT DETAILS

1. Persons contacted

R. Jurgensen, Plant Manager
R. Keith, QA Supervisor
W. Dorschel, QC Inspector
J. Randolph, Utility Operator

2. Inspection Scope

The inspection was a special inspection to review the facilities installation of fire barriers and air seals.

3. Specifications

A review of the facilities specification (DCCFP101QCN) for cable tray penetration fire barrier and air seal revealed the following:

a. Sealant - Flexible Silicone Rubber Foam (Silicone Class Dimethyl Polsiloxane, U. L. Listed 94 VE-0) tested in accordance with ASTM E119 (Fire tests of building construction materials). Material was tested and witnessed by insurance company on March 26, 1975. Test was for five hours and to temperatures of 2075°F with no ignition.

b. Application - At boundaries of room/areas listed in the specification all wall and floor opening are sealed to the thickness of the wall or 12 inches ± 1. If cables occupy greater than 50% of opening then 6 inches ± 1 is applied.

c. Repairs or modification - Methods not detailed in specification.

4. Maintenance and Modification Procedures

Reference to the DCCFP101QCN specification is not used or called for in the facilities modification or maintenance procedures. The Licensee has no procedures for seal repair.

5. Installation

The inspector toured the areas required by specification DCCFP101QCN to be sealed to observe the licensee's adherence to the specification. The following types of deficiencies were noted in most areas:

a. Opening not sealed.

b. Flammable backing material not removed after seal installation as required by the specification.

c. Holes in seals created when cables were removed.

d. Seals partially removed due to cable pulling or removal.

e. Holes created by cable removal sealed with flammable material (duct seal)

The licensee's later inspection revealed that about 20% of the 2100 openings requiring sealing were deficient with some aspect of the specification.

6. Response to IE Bulletins 75-04 and 04A

The licensee responded to 75-04 on April 23, 1975. Included in this response is a schedule for review of the various items of 75-04A.

UNITED STATES NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report of Operations Inspection

IE Inspection Report No. 050-010/75-09
IE Inspection Report No. 050-237/75-14
IE Inspection Report No. 050-249/75-12

Licensee: Commonwealth Edison Company
P. O. Box 767
Chicago, Illinois 60690

Dresden Nuclear Power Station
Units 1, 2, and 3
Morris, Illinois

License No. DPR-2
License No. DPR-19
License No. DPR-25
Category: C

Type of Licensee: BWR GE

Type of Inspection: Special, Announced

Dates of Inspection: April 28 and May 12, 1975

Dates of Previous Inspection: April 21-24, 1975 (Operations)

Principal Inspector: T. L. Harpster T. L. Harpster 5/27/75 (Date)

Accompanying Inspectors: None

Other Accompanying Personnel: None

Reviewed By: H. C. Dance H C Dance 5/28/75 (Date)
Senior Inspector
Nuclear Support
Operations Branch

SUMMARY OF FINDINGS

Enforcement Action: None.

Licensee Action On Previously Identified Enforcement Items: None required.

Unusual Occurrences: None.

Other Significant Findings

A. Current Findings

1. Unresolved Items

The inspector questioned the cable separation in areas of the RPS and ESS Systems. This matter is considered to be unresolved pending further investigation. (Paragraph 5, Report Details)

B. Status of Previously Reported Unresolved Items: Not inspected.

Management Interview

The following subjects were discussed at the conclusion of the inspection on May 12, 1975, with Messrs. Roberts, Butterfield, Hausman, and Jurecki.

A. The inspector summarized the findings of his visual examination of penetrations. The inspector stated that:

1. Penetrations had been identified which had not been sealed, had not been resealed, or had not been sealed/resealed in conformance with specifications.

2. Combustible material was identified both in penetrations and cable trays.

3. Many fire stops were deteriorating because of material shrinkage. (Paragraph 4, Report Details)

B. The inspector questioned whether cable separation was adequate in areas of the RPS and ESS Systems. The inspector stated that this would be considered an unresolved item pending further investigation. (Paragraph 5, Report Details)

C. The licensee discussed parts of the reply to IE Bulletin No. 75-04A with the inspector. The Bulletin reply is in preparation.

D. The inspector discussed the licensee's modification control procedures. The licensee acknowledged that there was presently no procedure for maintaining fire stops on a continuing basis. (Paragraph 3, Report Details)

REPORT DETAILS

1. Personnel Contacted

A. Roberts, Assistant Plant Superintendent
D. Butterfield, Administrative Assistant
J. Jurecki, Staff Assistant to Maintenance Engineer
J. Hausman, General Engineer

2. Construction Specifications

a. The inspector reviewed Sargent and Lundy Standards. The following summary is provided.

(1) Cable Pan Fire Stop and Air Seal Through Wall (STD-EA-175)

The opening and void between cables is filled with Thermal Insulating Wool. A 1/4 inch layer of Flamemastic is applied over the Thermal Insulating Wool to form the seal.

(2) Fire Stop in Cable Riser (STD-EA-176)

A support for the Thermal Insulating Wool is installed at the bottom of the fire stop. The Thermal Insulating Wool and Flamemastic is applied as in 2.a.1. above.

(3) Control Board Cable Entrance Seal (STD-EA-179)

Similar to 2.92 above except the bottom support is specified as ebony board.

b. The inspector reviewed Sargent and Lundy Drawing 12E2079 Electrical Installation-Reactor Building, which stated:

After cables are in place, stuff Turbine Building end with Duc-Seal and Oakum, then fill from Reactor Building side with GE Silicon Rubber Type RV-108.

c. The licensee stated that it had determined through discussions with General Electric that GE Silicon Rubber Type RV-108 is moderately flammable.

d. The inspector reviewed Owens-Corning Fiberglass Customer Acceptance Standard IN-144.13 for Thermal Insulating Wool (TIW) Type II.

(1) The product is designed for use on all heated Industrial Applications at temperatures up to 1000°F.

(2) The product meets the following standards and specifications:

(a) Federal Specification HH-1558B (Amendment 2)

(b) Form B, Type I, Class 7 and Class 8;

(c) Form C, Class 10;

(d) Form D, Type IV, Class 14;

(e) Military Specification MIL-I-2818B (requires waiver of LOI)

(f) U. S. Atomic Energy Specifications and Guides Development

(g) RDT Standard M 12-1T

(h) U. S. AEC Regulation Guide 1.36

e. The inspector reviewed a Factory Mutual Research Corporation Evaluation of Flamemastic 71A". The following conclusions were reached.

(1) The Flamemastic when applied in accordance with the manufacturers specifications did not cause excessive cable heating for the maximum cable current permitted by the National Electric Code.

(2) The Flamemastic coating prevented the spread of fire when exposed to a moderate intensity ignition source.

f. The inspector reviewed a Franklin Institute Research Laboratories Report of Flamemastic. The following summary is provided:

Samples of electrical cables were coated with Flamemastic. Part of the samples were exposed to 2×10^8 rads of gamma irradiation. All of the samples were then given a flame test. In all cases, the Flamemastic prevented propagation of the flame away from the ignition source.

3. Maintenance and Modification Procedures

The licensee stated that there are no specific modification procedures to ensure that fire stops and compartment boundary seals are maintained on a continuing basis.

4. Visual Examination

The inspector toured the facility with Messrs. Hausman and Jurecki to determine the extent of conformance with the specifications in Paragraph 2. Specific areas examined were the Control Room, Auxiliary Electric Room, Computer Room, Turbine Building, Reactor Building, and Diesel Generator Rooms.

The following areas of interest were identified.

a. A large number of penetrations were not sealed. Examples are:

(1) Unsealed conduit sleeves in control boards.

(2) Horizontal cable tray wall penetrations in Auxiliary Electric Room, Computer Room, and Turbine Building.

(3) A large cable bundle penetration in the wall between the Auxiliary Electric Room and the Computer Room.

(4) Unsealed openings in the Auxiliary Electric Room wall for conduit runs.

(5) Vertical risers without fire stops in the Turbine Building.

b. Several penetrations were identified which had cables added and were not resealed.

c. A large number of penetrations were not sealed/resealed in conformance with specifications.

(1) There were 4 basis types of seals in control board floor panels:

(a) Thermal Insulating Wool and Flamemastic (This seal is in conformance with specifications).

(b) Thermal Insulating Wool and an unidentified tan grouting compound.

(c) Thermal Insulating Wool and an unidentified asbestos fiber and plaster like material mixture.

(d) Combinations of the above.

(e) Unit 1 control board floor panels were solid concrete.

(2) Control board floor panels had been resealed with Duc-Seal and Silicon Rubber (RTV).

(3) Sleeve penetrations across the secondary containment wall were generally 100 percent RTV.

(4) Two penetrations across the secondary containment wall were stuffed with rags on the Turbine Building side. The Reactor Building side of these penetrations was not accessible.

(5) Horizontal cable tray penetrations in the Turbine Building were covered with wood or masonite boards.

d. Both the Flamemastic and Asbestos Fiber plaster like mixture had shrunken considerably causing deterioration of the fire stops.

e. Combustibles were noted both in trays and penetrations.

(1) Combustible materials in penetrations include RTV and Duc-Seal, both of which may be moderately flammable. Rags were found in 2 penetrations. Wood or masonite boards covered a large number of horizontal cable tray penetrations in the Turbine Building.

(2) Paper, rags, and wood were found laying in cable trays at various locations in the plant.

5. Separation

The inspector considers the following matters to be unresolved pending further investigation.

a. Cables from separate divisions of the reactor protection system are tied together in common bundles within the control boards, e.g., Panel 903-10.

b. Cables from different divisions of the engineered Safeguards Systems come together in panels in the Auxiliary Electric Room; e.g., panels 902-33, 902-38, and 902-47.

6. Control Boards

The inspector noted during the visual examination that many control boards were open on top and in back. An open ladder type cable

tray ran directly over open Unit 2 and 3 panels. The licensee stated that the panels were supplied without tops and backs.

7. Bulletin Status

The licensee submitted the reply to IE Bulletin No. 75-04 on April 25, 1975. The licensee is preparing a reply to IE bulletin No. 75-04A.

UNITED STATES NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report of Operations Inspection

IE Inspection Report No. 050-155/75-06

Licensee: Consumers Power Company
212 West Michigan Avenue
Jackson, Michigan 49201

Big Rock Point Nuclear Plant
Charlevoix, Michigan

License No. DPR-6
Category: C

Type of Licensee: BWR GE

Type of Inspection: Special, Announced

Dates of Inspection: April 30, and May 1, 1975

Dates of Previous Inspection: March 5-7 and 24-26, 1975 (Operations)

Principal Inspector: I. N. Jackiw — 5/19/75 (Date)

Accompanying Inspectors: None

Other Accompanying Personnel: None

Reviewed By: H. C. Dance
Senior Inspector
Nuclear Support
Operations Branch — 5/19/75 (Date)

SUMMARY OF FINDINGS

Enforcement Action: None.

Licensee Action on Previously Identified Enforcement Matters: Not inspected.

Unusual Occurrences: None.

Other Significant Findings

A. Current Findings: None.

B. Unresolved Items: None.

C. Status of Previously Reported Unresolved Items: None.

Management Interview

At the conclusion of this inspection on May 1, 1975, a management interview was conducted with Messrs. Hartman, (Plant Superintendent); DeMoor, (Technical Engineer); and Kuemin, (Engineer). The following items were discussed:

A. In regard to facility construction specifications, the inspector acknowledged the licensee's earlier statements that no such documents were available at the site. (Paragraph 2, Report Details)

B. The inspector stated that the licensee's Administrative Control Procedures for facility change control have no provision for Quality Assurance review of facility changes prior to start of work.

The licensee acknowledged this and stated that the corporate office is presently revising all Administrative Procedures. (Paragraph 3, Report Details)

C. The inspector summarized the areas that were examined and stated that two areas of concern were noted. The licensee stated that these areas will be reviewed for corrective action. (Paragraph 4, Report Details)

D. The inspector stated that the following potential fire hazard conditions were noted:

1. Exposed cable trays.

2. Splices in cable trays.

3. No fire stops between compartment boundaries.

The licensee acknowledge this with no comment. (Paragraphs 4, 4.c and 4.d, Report Details)

REPORT DETAILS

1. Persons Contacted

C. Hartman, Plant Superintendent
D. McMoor, Technical Engineer
J. Kuemin, Engineer

2. Construction Specifications

No construction specifications were available for the inspector to review. The licensee representative stated that the corporate office and the architect engineer were contacted and it appears that no construction specifications in this area of concern exist for the plant.

The inspector requested that he be contacted if any specifications are located.

As-built drawings were reviewed and indicated that no seal nor penetration information were specified on these drawings.

3. Maintenance and Modification Procedures

The inspector confirmed that Administrative Control Procedure A7.0 for maintenance activities, specifies adequate review for the activity to be performed. This procedure also requires that safety related maintenance activities be reviewed by the Quality Assurance Engineer.

The inspector noted however, that Administrative Control Procedure for facility change activities does not provide for Quality Assurance review prior to start of the work. The licensee responded that to his knowledge the corporate office did not include this requirement in the current revisions to the Administrative Control Procedures.

The inspector inquired as to what guides and standards will be used for future maintenance and modification activities. The inspector also asked if the licensee plans to review the use of fire stops in penetrations. To both of these inquiries the licensee responded that he did not know what actions would be taken by the corporate office.

4. Visual Examination

The following areas of the plant were examined to determine the condition of the licensee's cables, cable trays and penetrations:

a. Control Room - all power and control cables penetrate the floor behind the control panels and are not sealed. The penetrations are about 6 x 12 inches. No fire retardant material is used on either side of the penetration. Cables from the control room go to the compressor room below.

b. Compressor Room - cables from the control room run into horizontal trays that are vertically stacked about 2 feet from each other. Cable trays in this room have no solid tops nor bottoms. Also, no fire retardant material is used on any of the cables in this room.

In this room are located the plant air compressors, air receiver tanks, station batteries and a number of station motor control centers. The motor control centers serve the following equipment: reactor shut down pumps; station battery charger; core spray pumps; emergency diesel generator; reactor protection MG sets; etc.

About 9 cable trays penetrate the compressor room wall and go to the cable penetration room. No sealant material is used in these penetrations.

c. Cable Penetration Room - cable trays in this room are stacked above each other with separations of about 2 feet and these trays have no solid tops or bottoms. A number of taped and crimped splices were observed in these trays. The jacket material for these taped splices is pulled back exposing what appears to be the PEPVC material used to insulate the individual conductors. Other splices observed were covered with clear plastic covers and were part of the factory assembled penetration seals.

d. Containment - in the penetration seal area taped and crimped splices were observed in a number of cable trays. Cable trays at the seal area are open trays (no solid top nor bottom) and are stacked above each other with separations of about 2 feet between trays.

In other areas of the containment, almost all cable trays that run under metal grating are covered with solid metal covers. Where trays are stacked vertically under the metal grating only the top tray is covered. The inspector noted that cable tray TF which runs under the 599' 5" elevation grating does not have a cover. The licensee stated that he will look at this matter.

In storage room No. 441 the inspector observed that combustible material was being stored next to the 3 vertical cable trays in this room. At the time of the exit interview, the licensee stated that a maintenance order had been initiated to clean up this room.

The following two items of concern were identified by the licensee prior to this inspection:

(1) Two wooden cable supports in the control rod drive room.

(2) A rubber cover in the penetration between the accumulator and the control rod drive rooms.

The licensee stated that these items are under review.

5. Cable Survey and Test Reports

Following a cable tray fire at the Peach Bottom plant in 1965 the licensee conducted an electric cable, penetration and tray survey and control cable and switch board wire tests. Reports of these activities were reviewed by the inspector and a summary of the findings of these reports is provided below:

"Electric Cable, Penetration and Tray Survey Report"

a. Independent conductors of power cables are insulated with butyl rubber. The outer jacket is of butyl rubber, neoprene or PVC.

b. Nearly all control cable has 20 mil polyethylene (PE) insulation on each conductor, covered by a 10 mil thick layer of polyvinylchloride (PVC). The outer cable jacket is of PVC.

c. Area under the control room has some automatic sprinkler fire protection and the area near the sphere penetration has none.

d. Each conductor through the sphere penetration is spliced about 10 feet from each side of the penetration. The splices fall adjacent to each other in the cable trays.

e. Although no history of splice failure exists, it is recognized that these are trouble points in any cable run.

f. In the sphere area where many stacked trays run under metal grating, a cover over these should be considered.

g. In some locations, removal barriers in vertical trays between rooms would reduce chimney - type spread of fire.

h. A large part of the 480V power for the sphere is supplied through one penetration.

i. Parallel valves for the emergency condenser inlet are controlled by circuits through the same sphere penetration. The same is true of the emergency condenser outlet valves. Also, liquid poison parallel control valves use one penetration.

"Control Cable and Switchboard Wire Report"

a. PEPVC control cable, Super Coronol Flamenol - GE and group of 15 single PEPVC conductors without PVC jackets failed flame resisting tests.

b. BRP PEPVC does not have petroleum wax inside cables (Peach Bottom plant had this wax which is very flammable)

c. BRP field inspection showed no fire hazard due to similar Peach Bottom cable conditions.

d. There are areas where trays are exposed to fire hazards due to welding above and other hazards such as spilling liquids.

e. Inside the sphere near the nitrogen poison headers and just outside the sphere there are many splices with taped points within 10 inches of a second plastic covered splice.

f. PEPVC was not used for the 20 foot length of cable in the factory assemblies used for penetration seals.

g. It is recommended that metal covers be provided over open trays located under metal walk grating around reactor, along turbine generator and near nitrogen poison headers. These covers are required for top tray only when trays are stacked vertical.

"Control Cable and Switchboard Wire Flammability Test Report"

a. The PEPVC insulation on conductors themselves burns quite readily; however, the PVC jacket will not support combustion.

UNITED STATES NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report of Operations Inspection

IE Inspection Report No. 050-331/75-05

Licensee: Iowa Electric Light and Power Company
P. O. Box 351
Cedar Rapids, Iowa 52405

Duane Arnold Energy Center
Palo, Iowa

License No. DPR-49
Category: C

Type of Licensee: BWR 538 MWe

Type of Inspection: Special, Announced

Dates of Inspection: May 8 and 9, 1975

Dates of Previous Inspection: January 18 - 21, 27 and 28, 1975 (REP)

Principal Inspector: T. L. Harpster T. L. Harpster 5/27/75 (Date)

Accompanying Inspectors: None.

Other Accompanying Personnel: None

Reviewed By: H. C. Dance H C Dance 5/27/75 (Date)
Senior Inspector
Nuclear Support
Operations Branch

SUMMARY OF FINDINGS

Enforcement Action: None.

Licensee Action On Previously Identified Enforcement Items: None required.

Unusual Occurrences: None.

Other Significant Findings

A. Current Findings: None.

B. Status of Previously Reported Unresolved Items: Not inspected.

Management Interview

The following subjects were discussed at the conclusion of the inspection on May 9, 1975, with Messrs. Gebert, Gucciardo, and Vinquist.

A. The inspector summarized the findings of his visual examination of penetrations. The inspector stated that:

1. Several penetrations which had not been sealed were identified.

2. Penetrations were identified which had not been resealed.

3. Penetrations were identified which had not been resealed in conformance with specifications.

4. Combustible foam was found in several penetrations.

5. The plant generally conformed to the bulk of the specifications. (Paragraph 4, Report Details)

B. The inspector discussed the cable installation control procedure with the licensee. The licensee stated that the scheduled cable installation checklist (Form E-700) is currently being revised to provide assurance that the penetration is resealed. (Paragraph 3, Report Details)

C. The licensee discussed parts of the reply to IE Bulletin No. 75-04A with the inspector. The Bulletin reply is in preparation.

REPORT DETAILS

1. Personnel Contacted

J. Gebert, Maintenance Superintendent
T. Gucciardo, Electrical Engineer
J. Vinquist, Electrical Maintenance Supervisor

2. Construction Specifications

a. The inspector reviewed Bechtel Power Corporation's electrical engineering data letter No. 10 revised, fire stops for cable penetrations in floors and walls. The following summary is provided:

(1) Floor Penetrations

(a) Fire Stops for Cables Through Floor Sleeves

Marinite board is used as a form beneath the floor. The void area around the cable is filled with Thermal Insulating Wool. Flamemastic is applied to the cables inside the sleeve and built-up to 1/4 inch on top and bottom to form both a ventilation seal and fire stop. If the sleeve is in the open a second piece of marinite is installed on top the sleeve. Flamemastic Mastic is applied in a 1/8 inch layer on the penetration bottom to protect the holding screws in the Marinite.

(b) Fire Stop for Cable Trays Through Floor Openings

The installation is similar to 2.a.1.a above with some differences. For normal building slabs the opening is closed to within about 1 foot of the tray before the fire stop is installed. For 3 hour fire rated slabs the opening is closed to within about 1 inch. For fire rated slab closures, the cables inside the penetration are coated with Flamemastic. Then the opening is closed and the Marinite form and Flamemastic seal are applied to the bottom of the penetration.

(c) Fire Stop for Cable Trays Running Vertically Without Floor Fire Stops

Vertical cable tray runs have fire stops installed a minimum of every 20 feet. These are similar to 2.a.1.b above.

(2) Wall Penetrations

(a) Fire Stop for Cables Through Wall Sleeves

This is similar to 2.a.1.a above, except that Marinite is installed on one side only. If the sleeve is offset to prevent streaming, Marinite and Flamemastic is applied to both sides of the wall at the opening.

(b) Fire Stop for Cable Trays Through Wall Openings

This is similar to 2.a.1.b above.

b. The inspector reviewed "Johns-Manville" literature for Marinite. The following summary is provided:

(1) Marinite carries the following Underwriters Laboratories fire hazard classification:

Flame Spread	0
Fuel Contributed	Negligible
Smoke Developed	0

c. The inspector reviewed Bechtel Specification 7884-E-503, conduit and tray notes and details. The following summary is provided:

(1) Cable trays used for instrumentation shall be steel solid bottom. Instrumentation trays containing low level signals shall be covered.

(2) Covers shall be provided on each top tray run below floor gratings and in open areas where cable damage is likely.

(3) The minimum vertical distance between trays installed in tiers shall be 16 inches.

(4) All tray penetrations through floors, walls, and ceilings into areas which are otherwise isolated shall be provided with fire stops. Vertical runs of cable trays shall be provided with at least one fire stop every 20 feet.

(5) In manholes, all cables 5 kv and above shall be fireproofed from the point of entrance to the point of exit with asbestos tape or other approved fireproofing and arc resisting material.

d. The inspector reviewed General Electric Design Specification 22A3128, electric equipment separation for safeguards systems. The following summary is provided:

(1) Reactor Protection System

Wiring for the reactor protection system outside of the main protection system cabinet shall be run in rigid conduits used for no other wiring.

(2) Fire Hazard Zones

(a) Where routing of cables through areas where there is potential for accumulation of combustible liquids is unavoidable, only one division of RPS, NSSSS or ESS cables is allowed.

(b) In rooms where the only source of fire is electrical in nature, cable trays must have a minimum 3 foot horizontal separation or be separated by a fire resistant barrier.

(c) For redundant portions for ESS and ESSSS, the minimum vertical separation is 5 feet. The lower tray must have a solid metal cover and the upper tray a solid metal bottom.

(d) The minimum vertical separation for tray cross overs is 18 inches. The lower tray must have a metal bottom extending 5 feet from the intersection.

(e) Any openings in floors for vertical runs of RPS, NSSSS, or ESS cables must be sealed with fire resistant material.

(3) Control Room Panels

(a) Panels less than 3 feet apart containing circuits of different divisions must be separated by a steel barrier.

(b) Floor to panel fire barriers must separate adjacent panels with closed ends.

(c) Penetration of separation barriers within panels is permitted if the penetration is sealed such that an electrical fire could not reasonably propagate from one side to the other.

e. The inspector reviewed the following cable specifications:

(1) Bechtel Specification 7884-E-18, 5 kv Power Cable

This cable is certified fire resistant in accordance with a test performed by the Kerite Company on October 21, 1970.

(2) Bechtel Specification 7884-E-19, 600 V Power and Control Cable

(a) This cable is required to pass a horizontal and vertical flame resisting test.

(b) This cable must pass an additional flame resisting test in accordance with IPCEA Standard 5-19-81, 6.19.6.

(3) Bechtel Specifications 7884-E-23 A and B, Special Wire and Cable

This cable is required to pass a horizontal and vertical flame resisting test.

f. The inspector reviewed Bechtel Drawing 788-M-95, Sleeves and Seals Details, Penetrations and Blockouts

3. Maintenance and Modification Procedures

a. The inspector reviewed Bechtel Specification 7884-E-512, Cable and Wire Installation which states:

(1) The installation of conduits and raceways shall be in accordance with 7884-E-503. (Paragraph 2.c, Report Details)

(2) The installation of fire barriers shall be governed by "Engineering Data Letter No. 10, Fire Stops for Cable Penetrations in Floors and Walls". (Paragraph 2.a, Report Details)

b. The inspector reviewed the following documents:

(1) Cable and raceway installation control, form No. 1040.8

(2) Scheduled raceway installation, repair procedure No. RP-RAC/IE-1.

(3) Scheduled cable installation, repair procedure No. RP-CAB/IE-1.

c. The inspector stated that the above procedures did not provide assurance that a penetration would be resealed if a new cable were pulled. The licensee stated that the scheduled cable installation checklist (Form E-700) was currently being revised to make this provision.

4. Visual Examination

The inspector toured the facility with Mr. Gucciardo to determine the extent of conformance with the specifications in Paragraph 2. Specific areas examined were the Control Room, Cable Spreading Room, 1A3 and 1A4 Switchgear Rooms, Reactor Building, Turbine Building, and Diesel Generator Rooms. The inspector found the plant to generally conformed to the bulk of the specifications.

However, the following areas of concern were identified.

(a) Penetrations not sealed. Examples are:

(1) Opening in Marinite board in Control Room (IU5X) with no Flamemastic.

(2) Six inch sleeve 2C257 in Cable Spreading Room.

(3) Four inch conduit 2P877 in 1A4 Switchgear Room.

(4) Opening in wall between 1A3 and 1A4 Switchgear Rooms.

(b). Penetrations not resealed. Examples are:

(1) Generally all panels in Control Room which have had cables added have not been resealed.

(2) Six inch sleeve 2C242 in Cable Spreading Room.

(3) Cables in Control Room have been removed from seal tight flexible conduit and the conduit not resealed.

(c) Penetrations resealed, but not conformance with specifications. Examples are:

(1) Flamemastic replaced with Duc-Seal in Control Room.

(3) Minit Foam replaced with Duc-Seal in Cable Spreading Room penetration 2C253.

(3) Six inch sleeve P-805 in Cable Spreading Room stuffed with foam.

(4) Concrete replaced with Duc-Seal in Cable Spreading Room penetration P-804.

(d) Combustible foam in penetrations. Examples are:

(1) Penetrations which have never had the foam construction dams removed.

(2) Penetrations which have been resealed and stuffed with foam.

e. The inspector noted that the several penetrations in the control panels were filled greater than the 40 percent required by specifications.

5. Bulletin Status

The licensee is preparing a reply to IE Bulletins No. 75-04 and No. 75-04A.

U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report of Operations Inspection

IE Inspection Report No. 050-255/75-09

Licensee: Consumers Power Company
212 West Michigan Avenue
Jackson, Michigan 49201

Palisades Nuclear Generating Plant
Covert, Michigan

License No. DPR-20
Category: C

Type of Licensee: PWR (CE)

Type of Inspection: Special Announced

Dates of Inspection: April 28, May 5-7, 1975

Dates of Previous Inspection: February 12, 27, March 6, 14, 20, 21, 25, 26, April 11, 13, and 16, 1975 (RIP)

Principal Inspector: K. R. Baker 5/16/75 (Date)

Accompanying Inspector: None

Other Accompanying Personnel: None

Reviewed By: E. L. Jordan
Senior Inspector
Projects Unit 2
Reactor Operations Branch
5/16/75 (Date)

SUMMARY OF FINDINGS

Enforcement Action

None.

Licensee Action on Previously Identified Enforcement Matters

Not inspected.

Unusual Occurrences

None.

Other Significant Findings

A. Current Findings

Fire stops and ventilation seals for cable trays were observed that did not appear to be in conformance with design specifications. Licensee is preparing final replies to IE Bulletins 75-04 and 75-04A. A portion of the actions required by the IE Bulletins is in progress.

B. Unresolved Items

Repairs/modification to fire stops and ventilation seals. (Paragraph 5)

Management Interview

The following items were discussed with Mr. Lewis, Plant Superintendent on May 7, 1975:

A. The licensee stated that an overall review of fire protection was in progress. Besides design it includes training and fire fighting equipment. (Paragraph 6)

B. The need for a thorough comprehensive inspection of the fire stops was discussed. The licensee stated that such an inspection would be performed.

C. The licensee stated that any repairs to seals would be made using approved procedures and with material that was quality assured. (Paragraph 4)

D. The licensee stated that a long term solution to prevent modifications and other work from degrading the fire stops was being developed. (Paragraph 4)

REPORT DETAILS

1. Persons Contacted

J. Lewis, Plant Superintendent
G. Slade, Operations Superintendent
K. Berry, Technical Superintendent
H. Keiser, General Engineer
G. Hein, Maintenance Superintendent

2. Inspection Scope

A special inspection of fire barriers and air seals was performed.

3. Specifications

A review of the facilities' specification for fire barriers and air seals was made. The only specification covering these was E-42, Rev. 1. This specification deals with cable trays. It does require that ventilation seals be installed for the control room. The specification in general requires fire stops to be installed in cable trays entering various rooms. The fire stop is made of Marinite-36 (asbestos fiber board) ½ inch thick. Voids in the cable trays and board are to be stuffed with an inorganic thermal insulating wool covered and sealed with ¼ inch of Flamemastic 71A.

4. Maintenance and Modification Procedures

Facility modification and maintenance procedures do not address fire stops. No facility procedures exist for repair or installation of fire stops.

The specification E-42 had been revised to require its application to the cooling tower and new radwaste installation, but a review of the installation indicated fire stops had not been installed where cables were brought into the Control Room.

5. Installation

The inspector toured various areas required by specification E-42 to have fire stops. The following types of deficiencies were noted in most areas inspected:

a. Fire stops not installed.
b. Holes or removed Flamemastic created by cable removal/installation.
c. Fire stops and ventilation seals not installed in complete compliance with specification E-42.

The licensee records indicated that in December, 1974, tests showed the ability to maintain positive pressure in the Control Room with the present installation of fire stops and ventilation seals. When the inspector brought the opening in the Control Room to the licensee's attention the openings were temporarily plugged by stuffing the openings with inorganic thermal insulating wool.

6. IE Bulletins 75-04 and 75-04A

The licensee responded to these bulletins by requesting more time to prepare an answer. The licensee has various groups working on the reviews required by these bulletins.

The inspector discussed various aspects of the fire fighting, training and equipment with the licensee. These discussions indicated the licensee was reviewing the adequacy of training (breathing equipment, use of water on electrical fires, etc.), access to various areas and equipment under adverse conditions, and available emergency equipment.

U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report of Operations Inspection

IE Inspection Report No. 050-263/75-08

Licensee: Northern States Power Company
414 Nicollet Mall
Minneapolis, Minnesota 55401

Monticello Nuclear Generating Plant
Monticello, Minnesota

License No. DPR-22
Category: C

Type of Licensee: BWR (GE) 545 MWe

Type of Inspection: Special Announced

Dates of Inspection: April 23 and 24, 1975

Dates of Previous Inspection: April 2-4, 1975 (Radiological and Environmental Protection Branch)

Principal Inspector: F. Maura 5/8/75 (Date)

Accompanying Inspectors: None

Other Accompanying Personnel: None

Reviewed By: H. Dance 5/8/75 (Date)
Senior Reactor Inspector
Reactor Operations Branch

SUMMARY OF FINDINGS

Enforcement Action

None.

Licensee Action on Previously Identified Enforcement Matters

Not inspected.

Unusual Occurrences

None.

Other Significant Findings

A. Current Findings

None:

B. Status of Previously Reported Unresolved Items

Not inspected.

Management Interview

A management interview was conducted with Messrs. Larson, Plant Manager; Clarity, Superintendent Plant Engineering and Radiation Protection; Anderson, Superintendent Operations and Maintenance; and members of the licensee's staff at the conclusion of the inspection on April 24, 1975.

A. The inspector stated that none of the penetrations appear to have the approximate 2" thickness of Flamemastic stated by a Bechtel Corporation letter dated March 25, 1975. In fact some penetrations only have Flamemastic coating only a few mils thick. In view that the licensee no longer uses Flamemastic, but Pyrocrete, a Carboline product for which a minimum thickness of ¼" is recommended, the inspector requested that the licensee review the Bechtel's recommendation, reach a conclusion as to the required thickness, and implement a program to upgrade the present thermal barrier for all electrical penetrations.

The licensee agreed to proceed with such a program. (Paragraph 3, Report Details)

B. The inspector noted that, using core spray pumps No. 11 and 12 as examples it appears that the separation criteria outlined in the FSAR for cables routed through the cable spreading room is being met. However, due to the lack of cable identification in the room considerably more effort would be required to confirm the condition. (Paragraph 6, Report Details)

C. The inspector stated that a review of the self contained breathing equipment at the site, in light of the problems experienced at another facility, revealed that the licensee should consider:

1. Whether an adequate supply of air to refill used containers exists and where to obtain refills after normal working hours, specially during weekends.

2. Training personnel, specially the members of the emergency or fire teams in the use of the Scott Rescue Pak.

The licensee stated the capabilities of the Monticello, Anoka, and St. Cloud Fire Departments in supplying breathing air refills to the site will be determined. Also a training program in the use of the Scott Rescue Pak will be carried out. (Paragraph 7, Report Details)

D. The inspector requested and the licensee agreed to generate guidelines to be used by the station on how to fight all types of fires and in particular when to use water on electrical fires. (Paragraph 8.b, Report Details)

REPORT DETAILS

1. Persons Contacted

C. Larson, Plant Manager
M. Clarity, Superintendent, Plant Engineering and Radiation Protection
W. Anderson, Superintendent, Operations and Maintenance
D. Antony, Plant Engineer, Operations
H. Nimmo, Maintenance Supervisor
M. Hammer, Instrument Engineer
R. Perry, Engineer

2. Construction Specifications

The specifications available at the site consisted of Bechtel Dwg M-636 Revision 0, issued for construction on February 13, 1970 and recent correspondence between the licensee and Bechtel Corporation. For all typical penetrations shown in Drawing M-636 Revision 0, the sealing material specified was polyurethane covered on both sides with Flamemastic 71A of unspecified thickness. The polyurethane used was made by Instafoam Products, Inc., and has a trade name Insta Foam Froth Pak. According to a recent letter (March 25, 1975) from Bechtel Corporation the Flamemastic thickness was approximately 2 inches. The licensee has recently switched from Flamemastic to Pyrocrete 102, a Carboline product, as thermal barrier. Carboline recommends a minimum thickness of 1/4 inch.

In addition to the construction drawings the FSAR, Section 8, describes the routing and physical barriers used to separate and protect redundant channels or systems.

3. Visual Examination

The inspector verified that:

a. All cable penetrations have been sealed as required.

b. The control room end of the penetrations have been reinspected by the licensee and where required a new coating of pyrocrete has been applied. The thickness appears to exceed 1/4 inch.

c. In the cable spreading room most penetrations are covered with Flamemastic, but a few show areas where the urethane is visible. Where applied the Flamemastic thickness appears to range from a thin coating up to approximately 1/2 inch.

d. In the reactor building most of the penetrations of cables going to the cable spreading room had very thin Flamemastic coating in the order of a few mils. Specifically penetrations P-117 thru P-120 had little or no thermal barrier covering the polyurethane sealing material.

e. The same typical deficiencies noted before existed in the turbine building penetrations.

f. In the battery room it was noted that all cables are enclosed in conduit and the penetrations are covered by conduit terminating in metal junction boxes.

g. Spare penetrations are filled with polyurethane and covered with Flamemastic.

h. Smoke detectors are installed in the cable spreading room and annunciate in the control room. The detectors are supplied with non-interruptible 120 V AC power.

i. A Cardox system does not exist at the site.

4. Maintenance and Modification Procedures

The licensee does not have procedures which specifically cover how a penetration is to be made, sealed or repaired. The licensee stated procedures for a particular job would be developed as needed and in accordance with their Administrative Control Directives No. 3ACD 4.2 Revision 1, Design Change Installation Procedure; and No. 3ACD 4.3 Revision 1, Design Change Preoperational/Operational Testing. The licensee did state that the Task Force will be considering the preparation of a specific procedure to cover the sealing and/or repair of cable penetrations. The inspector verified that the licensee has modified his list of critical equipment (AWI 3.6.1 Revision 2) to include cable penetrations in order to require a second level of review by plant management prior to the performance of any work on the penetrations.

5. Response to IE Bulletins 75-04 and 75-04A

The licensee had prepared a draft response to IE Bulletin 75-04 and had submitted it to his HQ. He was not aware whether the response had been mailed to IE, and if any changes had been made to the draft. Regarding Bulletin 75-04A the licensee was forming a Task Force to look into the Browns Ferry fire and the requirements of the Bulletins. The members of the Task Force had not been named as of the time of our inspection, therefore, the licensee's effort in the areas covered by IEB 75-04A were yet to commence.

6. Separation Criteria

The inspector attempted to physically determine whether the separation criteria outlined in the FSAR Section 8 had been applied. Core spray pumps No. 11 and 12 control cables were utilized as examples. Through the use of cable tray numbers, cable routing lists, etc. the path of each cable from the control room to the Rx Building was traced. Physically, once the cables leave the control room, there is no marking which identifies the different cables found in each tray. Therefore, it can only be stated that if the cables follow the path noted in the reviewed drawings and schedules, then the separation criteria stated in the FSAR was met.

7. Self Contained Breathing Equipment

A review of the licensee's equipment available to enter areas of heavy smoke showed that:

a. There are six (6) Scott Air Packs and two (2) Scott Rescue Paks at the site.

b. Each air pack can supply breathing air for approximately 20 minutes and each rescue pack for approximately 4 hours.

c. There are six (6) breathing air cylinders used to refill the air bottles. Three were empty at the time of the inspection. Approximately 2 air pack bottles can be refilled out of each large cylinder, so that at the time of the inspection approximately 4 man-hours of working time were available.

d. The large cylinders are obtained at a commercial place located in St. Cloud (approximately 30 miles) or in Anoka (approximately 25 miles) and can be obtained only during normal working hours.

e. Although the licensee maybe able to refill the air cylinders at the Monticello, St. Cloud or Anoka Fire Departments no agreements exist with the Fire Departments for such service nor has the licensee determined to what degree such capability may exist.

f. For the Rescue Paks the licensee maintains ten (10) spare filters and two (2) oxygen bottles. Therefore, approximately 16 man-hours of use time were available.

g. Most plant personnel have been trained in the use of the Scott Air Packs, but very few in the use of the Rescue Pak.

8. Additional Findings

a. Although no procedures exist stating how penetration leaks are identified the licensee stated that no flame is ever used in the location of leaks, instead they use a smoke generator.

b. No procedures or guidelines presently exist covering how to fight the different classes of fire which may occur at the site.

c. A famability test of new polyurethane was conducted on April 23, 1975, by the licensee and inspector. The results were:

(1) The two fluids which comprise the Insta Form Froth Pak by themselves did not sustain combustion,

(2) the properly mixed solid polyurethane did not sustain combustion, but,

(3) an improperly mixed, solid polyurethane, which resulted when a defective valve in one of the canisters failed to operate properly, did sustain combustion.

U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report of Operations Inspection

IE Inspection Report No. 050-305/75-07

Licensee: Wisconsin Public Service Corporation
P. O. Box 1200
Green Bay, Wisconsin 54305

Kewaunee Nuclear Power Plant
Kewaunee, Wisconsin

License No. DPR-43
Category: C

Type of Licensee: PWR W

Type of Inspection: Special Announced

Dates of Inspection: April 23 and 25, 1975

Dates of Previous Inspection: April 9, 1975 (Management Meeting - Operations)

Principal Inspector: for E. L. Jordan D. C. Boyd 5/21/75 (Date)

Accompanying Inspector: None

Other Accompanying Personnel: None

Reviewed By: E. L. Jordan
E. L. Jordan
Senior Inspector
Reactor Operations Branch
5/21/75 (Date)

SUMMARY OF FINDINGS

Enforcement Action: None

Licensee Action on Previously Identified Enforcement Matters

None outstanding.

Unusual Occurrences

None inspected.

Other Significant Findings

A. Current Findings

The unit is currently operating essentially full power in a base load mode.

B. Unresolved Items

None

C. Status of previously Reported Unresolved Items

None.

Management Interview

The Management Interview was conducted on April 25, 1975, with Messrs. Louma, Plant Superintendent, and Lange, Assistant to the Superintendent, Maintenance.

The items discussed included the following:

A. Construction specification for electrical penetration. (Paragraphs 3a - 3d)

B. Results of Regulatory inspection of electrical penetration. (Paragraph 3d)

C. Current practices at plant. (Paragraph 4)

D. Compliance with the final safety analysis report. (Paragraph 5)

E. Plant Fire Protection System (Paragraph 5 c)

F. Licensee's Response to IE - Bulletins 75-04, 75-04A. (Paragraph 6)

REPORT DETAILS

1. Persons Contacted

Wisconsin Public Service Corporation (WPS)

C. Louma, Plant Superintendent
R. Lange, Assistant Plant Superintendent, Maintenance
J. Ruege, Quality Assurance Supervisor
R. Hirst, Maintenance Supervisor

2. General

Special Inspections were conducted on April 23, and 25, 1975 to determine the plant status in regard to the provision of acceptable fire stops and flame retardant seals for electrical penetrations.

The major inspection effort was of the electrical penetrations in the following areas:

- Control Room
- Relay Room (cable spreading room)
- Auxiliary Equipment and Ventilation Room (above control room)
- Diesel Generator Rooms
- Portions of the Turbine Building
- Portions of the Auxiliary Building

The inspection included a review of a representative sampling of the completed plant work request and modification request forms, plus discussions with the plant electrical Supervisor, the Quality Assurance Supervisor, and the Assistant to the Manager, Maintenance.

Also included in this inspection was a sampling comparison of License commitments in the Final Safety Analysis Report (FSAR) against the actual conditions now existing at the plant.

3. Penetration Seal Materials

The following materials and specifications were utilized in providing the fire-stops, sealing and fire retardant protection for the various electrical penetrations and trays at this plant;

a. Fire-Stops

These fire-stops are one inch thick sheets of "Marinite Board" manufactured by the Johns-Manville Company. The basic materials are cement and asbestos.

b. Fire-Retardant Materials

1. Flamemastic 71A manufactured by the Dyna-Therm Corporation. This is a water base material which is non-flammable at all times.

2. R.T.V.124 and 511 manufactured by General Electric Company. This material is documented by U.L. Test Subject 94 to be type SE-0 or H self-extinguishing rating.

c. Sealant Materials

The sealant materials which are packed in around the electrical cables in the electrical penetrations are all of the inorganic fiber insulation type of material.

1. Thermal insulating wool (glass) Johns-Manville.

2. Cerafiber - Johns-Manville.

3. Kaowool (glass) Babcock & Wilcox Company.

4. Flamemaster - Dyna-Therm Corporation.

These materials are specified as non-flammable and identified in purchase order specification on order K-664.

Thus, in summary, none of the materials used in sealing and fire retardant coating of these electrical penetrations are at any time flammable.

d. Penetration Sealant and Flame Retardant Specifications.

Detailed penetration sealing, fire retardant application, and fire-stop specifications are provided for eight different types of penetrations. These specifications are provided by Pioneer Service and Engineering Company on drawing No. 237127A - E2639F, Revision F, 11-1-73. These specifications were reviewed by the inspector prior to the physical examination of the various electrical penetrations in the plant. Several minor deficiencies were observed as follows:

(1) One non-safety related cable in a multi-cable penetration from the relay room to the control room was not coated with a flame-retardant material. It appeared that this cable had been installed after the penetration was originally sealed. The cable was firmly packed in fiber glass

wool to provide a seal, however, no flame retardant had been applied directly on this single cable. All other cables were coated with flame retardant material.

(2) Three 2" conduits originating in the relay room and terminating in the control room were not sealed, that is, a draft could be felt at the Control room end of these conduits.

(3) Two 2" spare conduit openings between the Relay room and the Auxiliary buildings were not sealed.

(4) At several electrical penetrations fire stops, the flame-mastic 71A fire retardant material was observed to be cracked, apparently due to shrinkage upon drying. This cracking up to ¼" in width, did not provide a pressure/smoke seal around the fire-stop.

The licensee is currently examining all safety related electrical penetrations for conformance to the specifications identified above. The licensee has stated the intent to correct any deficiencies found, including the four identified above, as expeditiously as time and plant conditions allow.

The four deficiencies are not considered as immediately serious by the inspector since they pose no fire propogation threat, but rather a smoke control problem. This plant utilizes a multi-mode ventilation system[1]/ which is designed to assure that smoke from any other portion of the plant can be prevented from entering the control room or can be swept out if it originates in the control room. As a backup measure the inspector observed that there are two self-supporting air breathing masks available in the control room. Also this plant is designed with the capability for a shut-down from outside of the control room. This capability was demonstrated as a part of the plant start-up and power ascension testing.[2]/ During this inspection the inspector re-reviewed this capability. Inspections at the control cabinet verified that control center, multi communications systems, and procedures[3]/ are current and ready for use.

4. Current Practices

a. Discussions with the Electrical Supervisor and the Plant

1/ Emergency Contol Room air conditioning system operation E-ACC-25.
2/ Power ascension test no start-up test No. 6.3, procedure E-0-06, on May 3, 1974.
3/ Emergency procedure E-0-06 control room inaccessibility.

Quality Assurance Supervisor, plus a review of plant work request and modification records indicate that none of the safety related electrical penetrations have been disturbed since final construction. Thus, there has been no need for special procedures for re-sealing an electrical penetration. General maintenance procedure - GMP No. 202, cable pull, carries a note to remind personnel of the need to return the penetration to "Original status" after each cable pull activity. However, this procedure does not reference the construction specifications referenced in item 1-D above. The licensee will consider listing this reference in a future revision of GMP 202.

The licensee does not believe that individual penetration seal testing to insure that a total pressure seal exists is necessary for penetrations other than containment boundary penetrations. This position is based on designed independence between the various plant ventilation control systems to permit sweeping of smoke from the various portions of the plant without the smoke being introduced into the control room. The separate control room ventilation system is designed with the capability to purge any smoke originating in the control room directly to atmosphere, or to operate in a total recirculation, totally filtered mode. Thus, the licensee does not intend to perform individual penetration seal tests. They do intend to adhere to the penetration specifications of item 3-d above in providing a flame stop, flame retardant fire barrier type penetration with reasonably tight smoke limiting seal. The inspector's review of FSAR and the penetration specification indicates that neither specifies that a measurable pressure seal exist, but rather that a "Fire Barrier" exist. No open flame is used in the testing of seals or penetrations in the Plant.

5. <u>Compliance with final Safety Analysis Report</u>

Other items inspected and compared against the commitment of the FSAR include the following: (sampling basis only)

a. The Main Auxiliary, Reserve Auxiliary and Tertiary Auxiliary Transformers are located outdoors and are physically separated from one another by firewalls. Each transformer cell, formed by the firewalls, has an automatic water spray system to extinguish and prevent the spread of fires.

b. Ampere ratings for the power conductors used are based on the National Electrical Code, 1968 Edition (USAS C1 - 1968)90°

rating, with a derating factor of 80% applied across the board to comply with section 318-6 of the National Electrical Code. The power conductors are three conductor, galvanized armored and installed in a single layer in ladder type cable trays, which are clamped to insure that ample ventilation spacing is maintained throughout the run.

c. All cables, exclusive of lighting circuits, have fire and radiation resistant jackets designed to withstand the radiation, temperature and humidity conditions of the containment atmosphere following a loss-of-coolant accident.

d. Cable separation is provided between redundant systems so that no single failure or incident can render both redundant systems inoperable or remove them from service.

Redundant circuitry for reactor protection and engineered safety systems are separated into six color coded Class 1E cable groups.

Each group is run in a separate tray, ladder, trough or conduit. These trays are identified on electrical drawings for engineered safety features and are marked and color-coded on the actual hardware. All trays for the engineered safety feature equipment are Class 1 structures.

Cable trays used for redundant reactor protection systems, engineered safeguards systems and Class 1E electrical systems have an identifying code number stencilled on them in colored paint after they are installed. The number is applied whenever there is a change in identity or when passing through floor or wall openings. This number is applied prior to the pulling of any cables, and the color established the system to which it is assigned.

For the non-Class 1E systems throughout the remainder of the plant, trays installed in stacks are spaced vertically with a minimum of 12" bottom-to-bottom in all areas. However, Class 1E trays have a minimum of 15" bottom-to-bottom between trays of the same train. Class 1E trays containing instrument, control or power cables have a minimum horizontal separation between redundant circuits of 36". Redundant circuits are not permitted in the same tray or conduit. If closer spacing than 36" cannot be avoided, an approved barrier is placed between the circuits. Cable trays are routed to avoid a fire hazard area, such as oil storage rooms, oil tanks, etc.,

whenever possible. When this cannot be done, the cable tray system is protected by fire resisting barriers. Where practical, these barriers are tray covers. Whenever possible a wall or floor has been introduced between trays carrying redundant safeguard circuits. Fire barriers are provided where mutually-redundant trays cross.

Where the wiring for redundant engineered safety features is within a single panel or panel section, this wiring is separated, one group from the other by a six-inch (6") air space or a fireproof barrier. The barriers are sheet metal or flexible metallic conduit. Special fiberglass housings have been installed around some safeguards relays inside safeguards cabinets in the control room.

e. Plant Fire Protection System

The inspector verified that applicable portions of the FSAR section 9.6.1., fire protection system, are currently functional:

(1) Control Room Protection

(a) Observed three portable CO^2 and one ansul extinguishers in the control room.
(b) Observed four portable CO^2 and four portable ansul extinguishers immediately available to the control room.
(c) Observed one large ansul unit immediately available to the control room.
(d) Observed two deluge spray nozzle and fire hoses immediately available to the control room.
(e) Observed special fire annunciator panel for twelve separate sections of the control room with separate annunciation for each of 12 smoke detectors.
(f) Observed zone status light panel for fire annunciation for rest of plant; 42 annunciators including electrical pentrations and cable runs.

(2) Relay Room Protection

(a) Observed one portable CO^2 extinguisher in relay room.
(b) Observed one CO^2 hose reel and deluge in relay room.
(c) Observed two smoke detectors with local pyrotronics annuciator units. (Also annuciate in control room)

(3) Diesel Generator Room

(a) Observed smoke and temperature detector units.
(b) Observed CO^2 deluge spray nozzles. Each diesel generator room is provided with an automatic CO^2 deluge from a 300 psig CO^2 system.

6. Licensee's Response to IE bulletins 75-04, 04-A

The licensee issued a response to these bulletins on April 23, 1975. The licensee has requested that responses to questions 3 and 4 of this bulletin be extended to May 12, 1975.

The licensee is actively pursing the answers to these questions.

UNITED STATES NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report of Operations Inspection

IE Inspection Report No. 050-254/75-09
IE Inspection Report No. 050-265/75-09

Licensee: Commonwealth Edison Company
P. O. Box 767
Chicago, Illinois 60690

Quad-Cities Nuclear Power Station
Units 1 and 2
Cordova, Illinois

License No. DPR-29
License No. DPR-30
Category: C

Type of Licensee: GE BWR

Type of Inspection: Special, Announced

Dates of Inspection: April 28, 30, and May 1, 1975

Dates of Previous Inspection: April 7-9 and 17-18, 1975 - Unit 1 (Operations)
April 22 and 23, 1975 - Unit 2 (Construction)

Principal Inspector: T. L. Harpster — 5/28/75 (Date)

Accompanying Inspectors: None

Other Accompanying Personnel: None

Reviewed By: H. C. Dance — 5/28/75 (Date)
Senior Inspector
Nuclear Support
Operations Branch

SUMMARY OF FINDINGS

Enforcement Action: None.

Licensee Action On Previously Identified Enforcement Items: None required.

Unusual Occurrences: None.

Other Significant Findings

A. Current Findings

Unresolved Items

a. Review of construction procedures has been incomplete. (Paragraph 3.b, Report Details)

b. The basis for tying together safeguards cables was not readily explainable. (Paragraph 4.e, Report Details)

B. Status of Previously Reported Unresolved Items: None inspected.

Management Interview

The following subjects were discussed at the conclusion of the inspection on May 1, 1975, with Messrs. Stolt, Hausman, Kalivianakis, and members of Mr. Kalivianakis's staff.

A. The inspector summarized the findings of his visual examination of penetrations. The inspector stated that a large number of the penetrations did not conform to specifications. The licensee acknowledged that this problem existed. (Paragraphs 2 and 4, Report Details)

B. The inspector discussed the modification control procedures with the licensee, and in particular the fact that not all procedures for safety related modifications are reviewed by the operations group prior to implementation. The inspector stated that this would be considered an unresolved item pending further investigation. (Paragraph 3, Report Details)

C. The inspector questioned as to whether cables from Divisions 1 and 2 safeguards systems should be tied together inside of panels. The licensee stated that the separation criteria existing at the time Quad-Cities was constructed had been met. The inspector stated that this would be considered an unresolved item pending further investigation. (Paragraph 4, Report Details)

D. The licensee discussed the reply to IE Bulletin No. 75-04A with the inspector. The licensee stated that the station had several personnel including the station fire marshall, on the volunteer staff of the local fire department. As a result of this involvement, much attention had been given to fire fighting, training and equipment.

REPORT DETAILS

1. Personnel Contacted

N. Kalivianakis, Plant Superintendent
K. Grasser, Maintenance Engineer
R. Querio, Technical Staff Supervisor
H. Stolt, Station Nuclear Design Engineer
J. Hausman, General Engineer

2. Construction Specifications

a. The inspector reviewed Sargent and Lundy Standards. The following summary is provided.

(1) Cable Pan Fire Stop and Air Seal Through Wall (STD-EA-175)

The opening and void between cables is filled with Thermal Insulating Wool. A 1/4 inch layer of Flamemastic is applied over the Thermal Insulating Wool to form the seal.

(2) Fire Stop in Cable Riser (STD-EA-176)

The support for the Thermal Insulating Wool is installed at the bottom of the fire stop. The Thermal Insulating Wool and flamemastic is applied as in 2.a.1. above.

(3) Control Board Cable Entrance Seal (STD-EA-179)

Similar to 2.92 above except the bottom support is specified as ebony board.

b. Inspector reviewed Sargent & Lundy drawing 4E1079, Electrical Installation-Reactor Building, which stated:

(1) After cables are in place, stuff turbine building end with Duc-Seal and Oakum, then fill from reactor building side with foamed cement and 1 inch thick seal of GE Silicon Rubber type RV-108.

(2) All conduits that are a continuous run through a secondary containment wall shall be sealed by inserting an "EYS" fitting, or approved equal in the run.

c. The licensee stated that it had determined through discussions with General Electric that GE Silicon Rubber type RV-108 is moderately flammable.

d. The inspector reviewed Owens-Corning Fiberglass customer acceptance standard IN-144.13 for Thermal Insulating Wool (TIW) Type II:

(1) The product is designed for use on all heated Industrial Applications at temperatures up to 1000°F.

(2) The product meets the following standards and specifications:

(a) Federal Specification HH-1-558B (Amendment 2)

(b) Form B, Type I, Class 7 and Class 8;

(c) Form C, Class 10;

(d) Form D, Type IV, Class 14;

(e) Military Specification MIL-I-2818B (requires waiver of LOI)

(f) U. S. Atomic Energy Specifications and Guides Development

(g) RDT Standard M 12-1T

(h) U. S. AEC Regulation Guide 1.36

e. The inspector reviewed a Factory Mutual Research Corporation Evaluation of "Flamemastic 71A". The following conclusions were reached:

(1) The Flamemastic when applied in accordance with the manufacturers specifications did not cause excessive cable heating for the maximum cable current permitted by the National Electric Code.

(2) The Flamemastic coating prevented the spread of fire when exposed to a moderate intensity ingition source.

f. The inspector reviewed a Franklin Institute Research Laboratories Report of Flamemastic. The following summary is provided:

Samples of electrical cables were coated with Flamemastic. Part of the samples were exposed to 2×10^8 rads of gamma irradiation. All of the samples were then given a flame test. In all cases, the Flamemastic prevented propagation of the flame away from the ignition source.

g. The inspector reviewed a letter from the Nuclear Energy Property Insurance Association (NEPIA) to Brand Industrial Services which stated:

We have completed our review of your drawings FS-1 thru FS-4, as well as the sample of the foamed-in-place cellular concrete proposed to be used as fire stops for the cable pans and conduit for the pass-through fire walls and concrete floors at the captioned locations. We wish to advise this material is acceptable to this Association as fire stops at the above two locations for their proposed use.[1/]

The inspector reviewed a second letter from NEPIA to Brand Industrial Services which stated:

Based on our office and field evaluation, foamed-in-place cellular concrete fire stops for cable pans and conduit for pass-through fire walls and floors as depicted in your drawings FS-1, 2, 3 and 4 (dated November 24, 1969) and covered in your BISCO Specification 202-72 (August 1, 1972), "Specification of Nuclear Power Stations" will be acceptable to this Association where we have jurisdiction.[2/]

3. Maintenance and Modification Procedures

a. The licensee stated that there are no specific modification procedures to ensure that fire stops and compartment boundary seals are maintained on a continuing basis.

b. The inspector determined through discussions with the licensee that safety related modifications can be implemented without the procedure being reviewed by the operations group. This can happen when the modification is sent from offsite to either the construction or substation construction group. The inspector considers this matter to be an unresolved item pending further investigation.

1/ Ltr NEPIA to Brand Industrial Services, dtd 12/4/69.
2/ Ltr NEPIA to Brand Industrial Services, dtd 2/12/73.

4. Visual Examination

The inspector toured the facility with Messrs. Stolt, Hausman, and other representatives of the licensee to determine the extent of conformance with the specifications in Paragraph 2. Specific areas examined were the Cable Spreading Room, Control Room, Auxiliary Electric Room, Reactor Building, Turbine Building, Piping Tunnel, and Diesel Generator Room.

The inspector noted that plant personnel were in the process of filling penetrations with Thermal Insulating Wool. The Licensee stated that they were waiting for Flamemastic to arrive to cover the wool.

The inspector identified 5 general areas of interest:

a. Unsealed Penetrations

(1) In the Cable Spreading Room, most cable tray penetrations through the wall into The turbine Building are not sealed around the tray.

(2) Unsealed conduit sleeves in the Cable Spreading Room and the Control Room.

(3) An opening for piping on a Cable Spreading Room wall.

b. Seals Which Do Not Conform to Specifications

(1) Fill Turbine Building end with Duc-Seal and Oakum. Then fill Reactor Building side with foamed cement and RTV.

(2) All conduits that are a continuous run through secondary containment walls are sealed with "EYS" fittings.

c. Cellular Concrete

The inspector noted that the cellular concrete was cracking and crumbling in many locations.

d. Combustible Materials at Various Locations

(1) The inspector noted some combustible material in penetrations.

(2) Examples are:

(a) Wood form wired in place.

(b) Wood in cable riser fire stop.

(c) Foam Dam in secondary containment penetration.

e. Separation

(1) The inspector noted that in the Auxiliary Electric Room, cables from divisions 1 and 2 of safeguards systems were tied in common bundles inside of the panels.

(2) Examples are panels 902-32, 902-33, 902-40, 902-41, 902-46, and 902-50.

(5) The inspector considers this matter to be an unresolved item pending further investigation.

5. Bulletin Status

The licensee submitted the reply to the IE Bulletin No. 75-04 on April 25, 1975. The licensee is preparing a reply to IE Bulletin No. 75-04A.

U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report of Operations Inspection

IE Inspection Report No. 050-295/75-04
IE Inspection Report No. 050-304/75-03

Licensee: Commonwealth Edison Company
P.O. Box 767
Chicago, Illinois 60690

Zion Nuclear Power Station, Units 1 & 2
Zion, Illinois

Licenses No. DPR-39
and No. DPR-48
Category: C

Type of Licensee: PWR 1050 MWe (W)

Type of Inspection: Special, Announced

Dates of Inspection: April 24 and 28, 1975

Date of Previous Inspection: March 27, 1975 (REP)

T. L. Harpster

Principal Inspector: T. L. Harpster 5/7/75 (Date)

Accompanying Inspector: None

Other Accompanying Personnel: None

H C Dance

Reviewed By: H. C. Dance, Senior Inspector
Nuclear Support Operations Branch 5/7/75 (Date)

SUMMARY OF FINDINGS

Enforcement Action

None

Licensee Action on Previously Identified Enforcement Items

None required

Unusual Occurrences

None.

Other Significant Findings

A. Current Findings

None

B. Status of Previously Reported Unresolved Items

Not inspected

Management Interview

The following subjects were discussed at the conclusion of the inspection on April 24, 1975, with Messrs. Wagner, Stolt and Zunjic, and with Mr. Stolt at Commonwealth Edison General Offices on April 28, 1975.

A. The inspector reviewed the findings of his visual examination of penetrations. (Paragraph 4)

B. The licensee discussed the reply to IE Bulletin 75-04 with the inspector.

C. The inspector discussed the penetration specifications with the licensee. (Paragraph 2)

REPORT DETAILS

1. Personnel Contacted

G. Wagner, Assistant Plant Superintendent
R. Budowle, Quality Control Engineer
D. Davidson, Engineering Assistant
H. Stolt, Station Nuclear Design Engineer
S. Zunjic, General Engineer

2. Construction Specifications

The inspector reviewed Sargent and Lundy standards:

a. Cellular concrete cable pan fire stop and air seal through wall (STD-EA-177).

b. Cellular concrete fire stop in cable riser (STD-EA-178).

These specifications state:

a. After cables have been installed, a fire stop shall be constructed as shown. The location of the fire stops will be as indicated on the Construction Drawings.

b. Temporary forms shall be installed to contain the cellular concrete. These shall be removed carefully after the fire stop is complete.

c. The cellular concrete shall contain no aggregate. It shall consist of a Portland Cement matrix around air voids which are generated by a preformed foaming agent.

d. The dry density of the cellular concrete shall be from 25 pounds to 45 pounds per cubic foot, depending on requirements.

e. The mixing and application of the cellular concrete shall be as directed by Brand Industrial Services, Inc., 2350 West Fulton St., Chicago, Illinois 60612 or approved equal.

The inspector noted that the specification drawings indicate that the penetrations are to be completely filled with cellular concrete, although no dimensions are specified.

The inspector reviewed Brand Industrial Services drawings:

a. Fire stop for cable pan through wall (FS-1).

b. Cable riser fire stop at floor (FS-2).

c. Fire stop for pipe and conduit sleeve through wall (FS-3).

d. Fire stop for pipe and conduit sleeve through floor (FS-4).

The inspector noted that the drawings indicate that the penetrations are to be completely filled with cellular concrete, although no dimensions are specified.

The inspector reviewed a letter from the Nuclear Energy Property Insurance Association (NEPIA) to Brand Industrial Services which stated:

> We have completed our review of your drawings FS-1 thru FS-4, as well as the sample of the foamed-in-place cellular concrete proposed to be used as fire stops for the cable pans and conduit for the pass-through fire walls and concrete floors at the captioned locations. We wish to advise this material is acceptable to this Association as fire stops at the above two locations for their proposed use.[1/]

The inspector reviewed a second letter from NEPIA to Brand Industrial Services which stated:

> Based on our office and field evaluation, foamed-in-place cellular concrete fire stops for cable pans and conduit for pass-through fire walls and floors as depicted in your drawings FS-1, 2, 3 and 4 (dated November 24, 1969) and covered in your BISCO Spec. 202-72 (August 1, 1972), "Specification for Nuclear Power Stations" will be acceptable to this Association where we have jurisdiction.[2/]

The licensee stated that no fire retardant coating was used on safety related cables because cellular concrete is non-flammable.

1/ Ltr. NEPIA to Brand Industrial Services, 12/4/69.
2/ Ltr. NEPIA to Brand Industrial Services, 2/12/73.

3. Maintenance and Modification Procedures

The licensee stated that there are no specific modification procedures to ensure that fire stops and compartment boundary seals are maintained on a continuing basis. The licensee stated that all work is accomplished through the Station Work Request program and thus is subject to the Operations Quality Assurance Program.

4. Visual Examination

The inspector toured the facility with Mr. Stolt and other representatives of the licensee to determine the extent of conformance with the specifications in paragraph 2. Specific areas examined were the Unit 1 Cable Penetration Room, Units 1 and 2 Cable Spreading Rooms, the Unit 2 Aux. Electric Room, and the Control Room.

The inspector identified three general areas of concern:

a. Combustible materials at various locations:

(1) Wood blocks supporting a cable tray.

(2) Wood in conduit sleeves and cable trays.

(3) Foam in conduit sleeves and cable trays.

(4) Unidentified ropelike material used to seal some conduit sleeves.

b. Unsealed Penetrations:

(1) Some penetrations had not been sealed at construction, e.g., D-24 A through D-24 F.

(2) Several conduit sleeves into control panels which were installed for spares but were never capped or sealed.

(3) Penetrations which have been opened to pull new cables and have not been resealed.

c. Cellular Concrete:

(1) While observing a penetration which had been opened to pull a new cable and not resealed, the inspector noted that the penetration was not solid with concrete as the specification indicated, but instead was only filled to a depth of about an inch.

(2) The inspector noted that the concrete was cracking and crumbling in many locations.

5. Bulletin Status

The licensee submitted the reply to IE Bulletin 75-04 on April 25, 1975. The licensee is preparing a reply to IE Bulletin 75-04A.

UNITED STATES NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report of Operations Inspection

IE Inspection Report No. 050-282/75-06
IE Inspection Report No. 050-306/75-04

Licensee: Northern States Power Company
414 Nicollet Mall
Minneapolis, Minnesota 55401

Prairie Island Nuclear Generating Plant
Units 1 and 2
Red Wing, Minnesota

License No. DPR-42
License No. DPR-60
Category: C

Type of Licensee: (W) PWR 560 MWe

Type of Inspection: Special, Announced

Dates of Inspection: May 12 and 13, 1975

Dates of Previous Inspection: April 29 - May 2, 1975 (Operations) Unit 1
April 7-11 and 16, 1974 (Operations) Unit 2

Principal Inspector: R.J. Cook for C. H. Brown 6/2/75 (Date)

Accompanying Inspectors: None

Other Accompanying Personnel: None

Reviewed By: R.J. Cook for H. C. Dance, Senior Inspector, Nuclear Support Operations Branch 6/2/75 (Date)

SUMMARY OF FINDINGS

Enforcement Action: None.

License Action on Previously Identified Enforcement Items: None required.

Unusual Occurrences: None.

Other Significant Findings

A. Current Findings: None.

B. Status of Previously Reported Unresolved Items: Not inspected.

Management Interview

A management interview was conducted with Messrs. Goering, Superintendent Plant Engineering; Hunstad, Staff Engineering; and Albreckt, Electrical Engineer; at the conclusion of the inspection on May 13, 1975. The following items were discussed.

A. The inspector's findings during the visual examination of the Penetrations. (Paragraph 3, Report Details)

B. The licensee's response to IE Bulletins No. 75-04 and No. 75-04A and the status of the task force. (Paragraph 5, Report Details)

C. The licensee's use of construction specifications for seal repair. (Paragraph 4, Report Details)

D. The fire fighting training equipment and the evaluation of their hose nozzles meeting the fogging necessary for fighting energized electrical cable fires. (Paragraph 7, Report Details)

REPORT DETAILS

1. Persons Contacted

E. A. Sasges, NSP QA Engineer
K. Albrecht, Electrical Engineer
D. Brown, Engineer
G. T. Goering, Superintendent Plant Engineering

2. Construction Specifications

Pioneer Service and Engineering Drawing NF-39202 through 13, 32712A-E360A, 237127A-E362, and Technical Specifications TS-262 were available and referenced in L. K. Comstock procedures 000-03-008[1/] and 000-03-009[2/]. The '009 procedure covers construction of the Category I ventilation, steam exclusion, and fire barrier seals around electrical cabling penetrations. The licensee considers the steam exclusion seals as fire barriers - both are similar construction.

The cable trays either have RTV poured over the random layered cabling and the remaining volume packed with fiberglass "board" or in the case of power cables, only the fiberglass "board is used. The fiberglass "board" and cabling is then sealed with Flamemastic 71A in two 1/8" coatings on both sides of the penetration. The seal verification is the quarterly ventilation test to verify that the auxiliary building does go to a negative pressure. No devices are used to check individual seals.

The above Comstock procedures are to be used for repair of a disturbed seal.

The construction drawings and applicable procedures follow the separation and barrier criteria in Section 8 of the FSAR. The color coding of the cables was performed as the cable was removed from the reel and all power cable is armored with semi-flexible aluminum sheathing. All cable in the plants is specified as Type I and meets the "Philadelphia Flame Test".

3. Visual Examination

The following areas were inspected where applicable to the fire barriers:

Control Room
Relay and Cable Pulling Room (Relay Room)

1/ "Electrical Conduit Seals" in the biological shield.
2/ Sealing Electric Openings.

Turbine Building
Auxiliary Building
Diesel Generator Rooms
Bus Rooms (Switchgear for Busses 15 and 16, 25 and 26)

In these areas the steam exclusion and fire barrier seals (approximately 40% examined) were found to be as specified except as follows:

a. Two cable tray penetrations were not sealed with Flamemastic on the Relay Room side.

b. In approximately 20% of vertical penetrations the Flamemastic has not bonded to the concrete on some part of the penetration periphery and the fiberglass could be seen. The lack of bonding was also noted on some of the cabling in this type of penetration. The above was noted only on the top seal of these penetrations.

c. In the vertical penetrations that have 3 or more layers of cables the internal cables did not appear to be completely sealed with Flamemastic in the fire barriers. This did not appear to be a problem in steam exclusion and Category I ventilation seals as RTV is poured into these seals. The licensee agreed to review this area and correct as necessary. This item was not fully covered in the procedure and the fire barriers are as specified.

   The "Permagum" (duct seal) which is flammable was used as dams for pouring RTV (Unit 1) or Chico (Unit 2) into conduit for sealing and is probably still in place. This annulus area was not inspected.

   Permagum was used to seal stub tubes in the penetration seals that have wires running through the tubes and the majority are not coated with Flamemastic. Permangum is the only flammable material used in the seals as RTV apparently only burns on surface and the char protects the remaining seal.

4. Maintenance and Modification Procedures

The licensee has initiated a procedure that routes to the Electric Engineer any work request that requires cable pulling through an existing seal or barrier. He reviews the work request and adds the applicable original construction sealing procedure to be used for repairing the seal. No modifications have been made in the 4 week period that this procedure has been in effect. The licensee is continuing the review of previous modifications and it appears that the new cabling has pulled through the stub tubes that are part of the seal. The tubes are either capped if not in use or fiberglass is packed around the wires and the ends of the stub tube is sealed with "permagum". The "permagum", in some cases, was sprayed with

flamemastic the majority of stub tubes in use have temporary cabling pulled through them and the licensee is evaluating covering the "permagum" with Flamemastic.

5. Response to IE Bulletins No. 75-04 and No. 75-04A

The licensee's response to IE Bulletin No. 75-04 has been received. The licensee stated that ignition sources as used in paragraph 3 of the response presently refers to welding and grinding, but is also to include other sources if any are used in the future. Northern States Power Company has formed a task force of personnel from both the licensee's nuclear sites. The initial meeting was held May 5, to set up the guidelines and the next meeting was scheduled for May 14.

Monthly progress reports are to be sent to IE until June 30, the scheduled date for completion of the response to the bulletins.

6. Separation Criteria

The requirements and specifications of the construction prints, the electrical wiring procedures and the FSAR, Section 8, appear to have been met as to the separation and barriers. The physical tracing of individual wires in a cable tray could not be performed beyond the first penetration as the cables left the control room or the termination point. The construction QA personnel have completed a 100% inspection of the barrier requirements using the prints and color coding with no deficiencies noted. The cable pull cards had previously been verified.

7. Fire Fighting Equipment

The fire fighting equipment available at the site consists of hose stations with fog or adjustable nozzles, portable CO_2, purple K fire extinguishers in the plant and 2 water extinguishers outside the control room doors. The relay and cable pulling room has an automatic Cardox system with manual start pull box. The diesel generator rooms have automatic water sprays. The fire detection system consists of ion smoke detectors and bimetallic temperature elements which alarm in the control room. The self contained breathing equipment was purchased for the purpose of airborne activity protection, but could be used for fire fighting. The equipment now on site is four single bottle Scott air packs with four spare bottles and four large cylinders that can recharge approximately 20 bottles. Each of the charged bottles provides approximately 30 minutes of working time. The person knowledgeable of how the cylinders are recharged was not available at the time of

the inspection. One Scott Rescue Pack with one spare oxygen bottle, each worth approximately 30 minutes, was available at the site. The Red Wing Fire Department will respond to a fire at the site and they have held fire fighting classes for the site personnel.

A training memo was issued by the Training Supervisor on May 6, 1975, outlining the training to be held in reference to the Brown's Ferry fire. The memo also refers to the National Bureau of Fire Underwriters Special Interest Bulletin No. 91 that lists safe distances vs. voltage for use of water fog on energized electrical wiring fires.

UNITED STATES NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report of Operations Inspection

IE Inspection Report No. 050-409/75-04

Licensee: Dairyland Power Cooperative
2615 East Avenue - South
LaCrosse, Wisconsin 54601

LaCrosse Boiling Water Reactor
Genoa, Wisconsin

License No. DPR-45
Category: C

Type of Licensee: BWR

Type of Inspection: Special

Dates of Inspection: April 23-24, 1975

Dates of Previous Inspection: March 5 - 7, 1975 (REP)

Principal Inspector: I. N. Jackiw — 5/7/75 (Date)

Accompanying Inspectors: None

Other Accompanying Personnel: None

Reviewed By: H. C. Dance — 5/7/75 (Date)
Senior Inspector
Nuclear Support
Operations Branch

SUMMARY OF FINDINGS

Enforcement Action: None.

Licensee Action on Previously Identified Enforcement Matters: Not inspected.

Unusual Occurrences: None.

Other Significant Findings

A. Current Findings: None.

B. Unresolved Items: None.

C. Status of Previously Reported Unresolved Items: None.

Management Interview

At the conclusion of this inspection on April 24, 1975, a management interview was conducted with Mr. Shimshak, Plant Superintendent and other members of the staff. The following items were discussed:

A. The inspector summarized the items covered during this special inspection and stated that the facility appears to be in compliance with their construction specifications. (Paragraph 2, Report Details)

B. The inspector stated that existing maintenance and modification procedures do not provide for an independent verification of job completion as required in the licensee's "Quality Assurance Program" manual Section XI.

The licensee replied that the independent verification effort will be implemented when the quality assurance procedures are written by November 1, 1975. (Paragraph 3, Report Details)

C. The inspector stated that during his visual examination of the cables and cable trays in the plant no immediate areas of concern were noted. (Paragraph 4, Report Details)

D. Regarding the status of the action taken in IE Bulletins 75-04 and 75-04A, the licensee stated that a response to these bulletins has been drafted and will be mailed to Region III. (Paragraph 5, Report Details)

REPORT DETAILS

1. Persons Contacted

H. Towsley, Quality Assurance Supervisor
W. Norwicki, Instrument and Electric Supervisor
R. Shimshak, Plant Superintendent

2. Construction Specifications

Allis-Chalmers and Sargent & Lundy construction specifications were reviewed to determine what requirements exist for fire barriers and boundary seals. No specifications exist for these two areas. However, A-C specification 41-491 "Specs for Electrical Design Features" requires that reactor building cable pans have solid bottoms and sides. The inspector confirmed that cable pans in the reactor building are so constructed. Also, reference drawings in S&L STD-EB-134 indicate that the minimum distance between horizontally stacked trays be 10 inches.

3. Maintenance and Modification Procedures

The following procedures relating to maintenance and facility change controls were reviewed to determine whether requirements are imposed in connection with modifications and repairs to cables and penetration boundries.

a. "Design Control and Review" ACP-04.1

b. "Facility Change Requests" ACP-04.2

c. "Maintenance Requests" ACP-17.3

These procedures provide sufficient review for maintenance and modification activities. Also, procedure ACP-0.4.1 states that the Plant Engineering Staff is responsible for establishment of a suitable test program as necessary to accomplish design reviews.

Review of procedures ACP-04.2 and ACP-17.3 showed that no provisions exists to include independent verification of job completion if and when required. The licensee stated that the "Quality Assurance Program" manual procedures are continuously being upgraded and independent verification requirements will be included as required.

In regard to the second emergency diesel generator installation, the inspector asked what controls would be followed prior to and during this installation. The licensee replied that procedures would be written for this installation activity.

4. Visual Examination

The inspector toured the following areas to determine the licensee's conformance with installation and construction specifications:

a. Control Room - cables penetrate the floor and are sealed through metal plates by compression fittings. It appears that this type penetration is adequate to serve as a fire stop.

b. Electrical Equipment Room - in this area cable penetrations exist between the control room (metal plates), the mezzanine floor of the Turbine building and cable penetration room (outside the northwest quadrant of the containment shell).

Cable pans in this room have solid bottoms and sides and are sprayed with a fire-proof material (Flamemastic 71A). In all sections where cables run from one cable pan to another Flamemastic 71A is used. Also, Flamemastic 71A is sprayed 3 feet on both sides of wall penetrations. Vertical cable runs in this room are enclosed in solid cable raceways. The room also contains the station batteries.

c. Turbine Building (Mezzanine Floor) - Flamemastic 71A is used about every 10 feet in the horizontal pans and at each cable pan junction. Cables penetrating the mezzanine floor and going to the grade floor below are fully enclosed.

d. Diesel Generator Room - power cables are totally enclosed in conduit and run into the concrete floor.

e. Cable Penetration Room - in this room cables from the primary containment penetration seals run vertically into horizontal pans and at this point and along the horizontal run are sprayed with Flamemastic 71A. This cable penetration room is presently being used for storage of items such as electrical extention cords, welding rods, tools, etc.

f. Containment - cable pans in this area are fully enclosed except where the cables enter and leave the pans at which point they are sprayed with Flamemastic 71A. Cables for the emergency core spray system, water level instrumentation and the emergency shutdown condenser are copper-sheathed, mineral insulated, fire-proof cables and run to the equipment itself.

In the areas examined the inspector noted that all wall penetrations are filled with fiberglass material and Flamemastic is sprayed on both sides of the penetration. The licensee stated that Flamemastic 71A was first applied in September 1972 for fire insurance purposes. Except for the Diesel Generator compartment, all areas examined have one or more fire extinguishers, also all these areas employ fire/smoke detection sensors that alarm in the control room. The licensee stated that he will consider placing a fire extinguisher outside the door of the Diesel Generator room.

5. Bulletin Status

Replies to Bulletins 75-04 and 75-04A had been drafted and would be sent to Region III.

U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report of Operations Inspection

IE Inspection Report No. 050-331/75-11

Licensee: Iowa Electric Light and Power Company
Security Building
P. O. Box 351
Cedar Rapids, Iowa 52405

Duane Arnold Energy Center
Palo, Iowa

License No. DPR-49
Category: C

Type of Licensee: BWR GE 538 Mwe

Type of Inspection: Special, Announced

Dates of Inspections: August 20 and 21, 1975

Principal Inspector: T. L. Harpster T. L. Harpster 9/17/75 (Date)

Accompanying Inspector: None

Other Accompanying Personnel: None

Reviewed By: W. S. Little
Senior Inspector
Nuclear Support
Operations Branch
9/17/75 (Date)

SUMMARY OF FINDINGS

Inspection Summary

Inspection on August 20 and 21 (75-11): Followup inspection of actions taken with respect to IE Bulletins 75-04 and 75-04A.

Enforcement Items

None.

Licensee Action on Previously Identified Enforcement Items

Not inspected.

Other Significant Items

A. Systems and Components

None.

B. Facility Items (Plans and Procedures)

None.

C. Managerial Items

None.

D. Noncompliance Identified and Corrected by Licensee

None.

E. Deviations

None.

F. Status of Previously Reported Unresolved Items

None.

Management Interview

The following subjects were discussed at the conclusion of the inspection on August 21, 1975, with Mr. G. Hunt and other members of your staff.

A. The licensee stated that no action had been taken as yet with respect to the deficient penetrations identified during the initial firestop inspection. (IE Inspection Report No. 050-331/75-05) The licensee stated that a 100% inspection of electrical penetrations, which are required to be sealed in accordance with Section M.3.5 of the DAEC FSAR and the construction specifications which implement this commitment, will begin on August 25, 1975. The estimated date for completion is October 15, 1975. The licensee stated that any combustible material found in electrical penetrations will be removed. Repair priority will be given to the control room, cable spreading room, etc., in accordance with the safety significance of each area.

The inspector asked to be notified of any change in this schedule and urged that this work be completed as expeditiously as possible. (Report Details, Paragraph 2)

B. The inspector stated that the revised "Scheduled Cable Installation" procedure and addendum had been reviewed, and appeared to ensure that cable penetrations would be sealed in accordance with licensee requirements. (Report Details, Paragraph 3)

REPORT DETAILS

1. Personnel Contacted

G. Hunt, Chief Engineer
J. Gebert, Maintenance Engineer
T. Gucciardo, Electrical Engineer

2. Penetration Repair Status

With the exception of minor deficiencies and combustible foam in several electrical penetrations, the plant was found to generally conform to the bulk of specifications during the initial firestop inspection. (IE Inspection Report No. 050-331/75-05)

The plant has been in an extended outage as a result of fuel channel vibration problems. No actions have been taken as yet with respect to the deficiencies and foam. The licensee stated that an inspection of electrical penetrations will begin on August 25, 1975, and that any combustible foam will be removed and deficient penetrations sealed in accordance with licensee requirements.

3. Repair Procedure

The inspector reviewed the following procedure and addendum: Repair Procedure RP-CAB/IE-1, "Scheduled Cable Installation", and Addendum E-700, "Scheduled Cable Installation Checklist".

The procedure had been revised to ensure that penetrations were sealed in accordance with licensee requirements after cable installation. The procedure included references to the appropriate specifications. (IE Inspection Report No. 050-331/75-05)

4. Fire Fighting Training

The licensee stated that in response to IE Bulletin 75-04A, training of plant personnel had been implemented under the station fire protection plan. The training is conducted on a monthly basis, and consists of both lectures and practical experience.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
230 PEACHTREE STREET, N. W. SUITE 818
ATLANTA, GEORGIA 30303

IE Inspection Report No. 50-321/75-6

Licensee: Georgia Power Company
270 Peachtree Street, N. W.
Atlanta, Georgia 30303

Facility Name: Edwin I. Hatch Plant, Unit No. 1
License No.: DPR-57
Docket No.: 50-321
Category: B2

Location: Baxley, Georgia

Type of License: BWR, 2436 MWt

Type of Inspection: Special, Announced

Dates of Inspection: May 6-8, 1975

Dates of Previous Inspection: April 8-11, 1975

Principal Inspector: D. G. Hinckley, Reactor Inspector
Facilities Operations Branch

Accompanying Inspectors: None

Principal Inspector: D. G. Hinckley 5/28/75
D. G. Hinckley, Reactor Inspector
Facilities Operations Branch
Date

Reviewed by: F. J. Long 5/30/75
F. J. Long, Chief
Facilities Operations Branch
Date

AMERICAN REVOLUTION BICENTENNIAL 1776-1976

IE Rpt. No. 50-321/75-6

SUMMARY OF FINDINGS

I. Enforcement Items

None

II. Licensee Action on Previously Identified Enforcement Matters

Not inspected

III. New Unresolved Items

None

IV. Status of Previously Reported Unresolved Items

Not inspected

V. Significant Findings

A. Control and procedures lacking for breaching and repair of fire stops. (Details I, paragraph 3)

B. Emergency procedures do not address alternate methods for accomplishing a plant shutdown and cooldown upon loss of normal and alternate preferred shutdown and cooldown systems. (Details I, paragraph 5)

VI. Management Interview

On April 10, 1975, a management interview was conducted by Mr. D. G. Hinckley with Mr. D. P. Shannon and selected members of his staff. The scope of the inspection and findings were discussed. (Details I)

DETAILS I

Prepared by: D. G. Hinckley, Reactor Inspector
Facilities Operations Branch
5/28/75 Date

Dates of Inspection: May 6-8, 1975

Reviewed by: F. J. Long, Chief
Facilities Operations Branch
5/30/75 Date

1. Individuals Contacted

D. P. Shannon - Plant Superintendent
M. Maury - Assistant Plant Superintendent
D. R. Savage - Operating QA Engineer
H. P. Walker - Technical Supervisor
C. E. Bellflower - Senior Field QA Representative

2. Scope of Inspection

The inspection was performed to determine the requirements relating to compartment boundary seals and fire stops for electrical penetrations, imposed by facility construction specifications, for the Edwin I. Hatch Nuclear Plant and to determine the extent to which the facility currently conforms to these requirements.

Particular inspection effort was given to the following major areas:

(1) design information

(2) plant modifications

(3) conformance to identified requirements

(4) response to IE Bulletins 75-04 and 75-04A

3. Design Information

a. Construction Specifications

Georgia Power Company drawing A-13029, "Electrical Seals", establishes a guide of basic specifications and details for general fire stops and seals for cable penetrations in floors and walls of the Hatch Nuclear Plant. This guide does not address the secondary containment fire stops and pressure seals consisting of modular units, identified as Multi-Cable Transit (MCT), manufactured by Nelson Electric Division of Sola Basic Industries. The frames for these modular units are detailed on construction drawings. The specifications for the general fire stops and seals and a brief description of the MCT modular units are discussed below.

(1) Floor Penetrations

Cable trays entering the floor of the cable spreading room are sealed to provide a fire barrier and insure a ventilation seal. Specifications require that one-half inch Marinite-36 was to be used as a form beneath the floor, cut to fit around cables and cable tray. Mineral insulating wool was to be used where necessary to fill large voids around the cable. Flamemastic 71A sprayable was to be applied to the cables in the penetration as well as a minimum of twelve inches below the penetration. Flamemastic 71A mastic was to be applied over the holding screws and between the Marinite panel form. Flamemastic 71A sprayable was then to be built up to approximately 1/4 inch on the bottom of the Marinite form around the cables and cable tray, at their entry through the form, to insure a fire stop and ventilation seal.

The top opening of the penetration was to be covered with a steel plate or a piece of 1/2 inch Marinite-36 board to prevent debris from gathering into the penetration.

Within the reactor building (secondary containment) most floor penetrations between levels consist of either embedded walker duct or embedded conduit. Mineral wool was to be installed in the bottom side of the penetration to fill voids. Flamemastic 71A was to be built up to approximately 1/4 inch on the bottom side of the penetration to provide a fire stop. Mineral insulating wool was to be used to fill large voids on the top side of the penetration to prevent debris from collecting in the penetration.

(2) Wall Penetrations

Whenever cable trays penetrate a compartment wall a fire stop is provided. The construction of the fire stop is much the same as described for floor penetrations. The exceptions being that Marinite was required only on one side of the wall, and Flamemastic 71A was to be applied to the cables for a minimum of 12 inches on either side of the wall and inside the wall opening, if possible.

(3) Cable Tray Fire Stops

Fire stops were to be placed in all cable trays at approximately 75 foot intervals. Construction was to consist of a one-half inch Marinite-36 panel placed around cables and cable tray and secured to a support strut. Mineral insulating wool was to be used where necessary to fill large voids around the cable. The cables in the cable tray were to be sprayed with Flamemastic 71A, twelve inches on either side of the fire stop. Flamemastic 71A, mastic was to be applied to a minimum 1/8 inch thickness over the holding screws and applied to fill the crack between the two pieces of Marinite, cut to fit around cables and cable tray.

Flamemastic was then to be built up to approximately 1/4 inch on both sides of the Marinite panel.

In vertical cable trays, a cover was to be installed on top and bottom (if not a solid bottom tray) of the tray. This cover was to be placed on the upper side of the fire barrier and was to extend at least five feet beyond the barrier.

(4) Secondary Containment Pressure Seals and Fire Stops

Conduit sleeves exist between the control building and reactor building. These conduits are sealed to allow the reactor building to be maintained at a negative pressure. The seals are similar to those installed for the diesel building wall seals described later in this report. The difference being that conduit sleeves are extended through the wall between junction boxes, and circuits feeding into the boxes are totally enclosed in conduit on both sides of the wall.

Wherever cables from cable trays penetrate the secondary containment from the cable spreading room or control building, the penetration is made through a Nelson Electric Multi-Cable Transit (MCT) module which provides both a seal and a fire stop. The TECRON (tradename) module fits snuggly around each cable. These modules expand when heated, choking off fire and smoke. This expansion supposedly compensates for the loss of cable insulation, burned away by a fire, thus maintaining the fire-tight integrity of the penetration.

(5) Control Room Floor Pressure Seals

Cable penetrations between the cable spreading room and control room panels were to be sealed with a flame retardant BISCO flexible silicone foam. Penetrations under the panels consist of recessed aluminum plates with multiple holes used to accomodate chase nipples, terminated conduit or flexible conduit extended through a hole. Spare holes in the aluminum plate were to be blocked and sealed with duct tape or extended into the panels with short lengths of aluminum conduit sealed on the spreading room side of the penetration with a penny and bushing arrangement, prior to placement of the sealing material.

The area under the control room panels was to be filled with BISCO flexible silicone foam, by Brand Industrial Services, to at least the embedded strut in the recess.

(6) Diesel Building Wall Pressure Seals

The penetrations between the diesel rooms and switchgear rooms are to be sealed. Each penetration sleeve was to be sealed by injecting RTV sealant into the spaces between the cables of the bundle. The injection was to start within the penetration as far as practical and was to extend to some two inches out of the penetration. Mineral wool was to be packed into the penetration around each cable bundle to within about 1/4 inch of the penetration opening. RTV sealant was then to be applied onto in, and around each penetration to cover the entire assembly with sealant not less than 1/8 inch in thickness.

b. Material Specifications and Qualifications

(1) Flamemastic 71A (Technical Bulletin 01079)

Dyna-Therm Flamemastic coatings are compounded of thermoplastic resinous binders, flame retardant chemicals and inorganic incombustible fibers. The manufacturer claims no burn-through of 1/16 inch coatings after 15 minutes exposure to a propane torch, at a distance of 2 inches, with a flame temperature of 2050°F.

(2) Marinite-36 Panel

Johns-Manville Marinite was originally developed to isolate and prevent the spread of shipboard fires. The manufacturer claims Marinite panels are composed of incombustible asbestos fibers, diatomaceous silica and a hydrothermally-produced inorganic binder. Marinite carries the UL label with the following fire hazard classification (based on 100 for untreated Red Oak):

Flame Spread	0
Fuel Contributed	Negligible
Smoke Developed	0

Marinite is approved by the Board of Standards and Appeals of the City of New York, meeting the requirements of C26-88.0 Administrative Building Code as an incombustible material.

(3) RTV-124

RTV-124 is a flame retardent adhesive sealant manufactured by General Electric. RTV carries the UL label and classifies as self-extinguishing, Group 0 (SE-0).

(4) Mineral Wool Insulation

Mineral wool insulation is a non-combustible asbestos material supplied by the Rock Wool Manufacturing Company.

(5) BISCO SF 20 Silicone Foam (BISCO Spec. #207)

BISCO flexible silicone foam is formulated with Dow Corning Corporation Components per Brand Industrial Services (BISCO) Specification #207. The silicone foam has a Dimethyl Polysiloxane base with a UL fire resistance listing of 94 UE-O. The foamed-in-place silicone has a temperature range of -76°F to 550°F.

BISCO SF 20 silicone foam was tested as a seal material at the D.C. Cook Nuclear Plant on October 12, 1974. Foamed-in-place silicone as a flexible flame retardant and ventilation seal for conduit penetrations through walls and floors was tested at the Pilgrim Nuclear Power Station on November 12, 1974. A test was performed by the Factory Mutual Research Corporation, on March 26, 1975, to investigate the fire endurance capabilities of BISCO silicone foam when subjected to fire exposure. The test was conducted in accordance with the Standard Fire Test of Building Construction and Materials ASTM E119-73.

(6) TECRON

TECRON (tradename) is the module material used in the Multi-Cable Transit (MCT) penetrations to provide the sealing and firestop capabilities as claimed by Nelson Electric. The manufacturer claims that cable penetrations have been tested to withstand temperatures of 1715°F without allowing passage of fire, smoke or gas. A Georgia Power Company representative stated that Nelson Electric MCT seals have been fire tested by both Nelson Electric and several other independent companies. At least one of these tests was conducted in accordance with ASTM Designation E 119-61.

c. Assembly Qualifications

An assembly or simulated assembly qualification test for installed fire stops was not performed by Georgia Power Company. The Nelson Electric MCT penetration has been extensively tested by the manufacturer and claimed to be an effective fire stop. Nelson Electric Bulletin 200-BF-002 indicates that MCT test reports are available for review.

d. Installation and Procurement

Georgia Power Company procedure A-13029, "Electrical Seals" provides guidance for installation of general fire stops and seals. The BISCO silicone foam seals between the cable spreading room and control room were installed by Brand Industrial Services, Inc. and apparently controlled by their installation procedure. The Nelson Electric MCT frames were detailed on construction drawings and installed during building construction.

Materials that are commercially available were purchased by specification and/or tradename from local suppliers. No certifications were provided.

e. Inspection

A GPC representative indicated that fire stops were inspected for conformance to requirements on initial installation. This inspection was to have been made by their QC department. At the time of the inspection, QC documentation of these inspections was not available.

Fire stops were not reverified during turnover of the facility to operations. Periodic or random inspections of fire stops are not presently being made.

4. Plant Modifications

Rerouting or routing of new cables for modifications is presently determined by Bechtel Engineering. If a plant modification is involved, it is to be reviewed by the Plant Review Board. Presently, it appears that there are not any procedures giving guidance on how to breach an existing fire stop or seal. No specific requirement or procedure exists for repair and inspection of any fire stop or seal breached for plant modifications. This was discussed with site management, and they committed to review the problem.

5. Conformance to Identified Requirements

Fire stops and seals were inspected in the Cable Spreading Room, Reactor Building, Control Building, Control Room and Diesel-Generator Building. The purpose of the inspection was to determine, by visual observation, to what extent design and construction criteria had been followed.

The visual inspection consisted of trying to determine the actual construction details and materials used by the outward appearance of the fire stops and seals. No attempt was made to disassemble any fire stop or seal to verify actual construction details or materials that were not obviously evident.

Two instances were identified where fire stops had been breached and repairs had not been made. These were located in one of the Reactor Protection Systems (RPS) motor-generator set compartments. This item was brought to the attention of site management.

During the inspection, general observations were made, particularly in the cable spreading room and control room, concerning cable routing as specified by the FSAR.

6. Licensee Response to IE Bulletins 75-04 and 75-04A

GPC has responded to IE Bulletins 75-04 and 75-04A. A general review of the response has been made. Additional followup as required will be performed during the next regular inspection. Review of emergency procedures, by the inspector, indicated that procedures were lacking in covering alternate methods for performing a plant shutdown and cooldown in case of loss of normal and preferred alternative shutdown and cooldown systems. Site management committed to review the adequacy of emergency procedures in this area.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
230 PEACHTREE STREET, N. W. SUITE 818
ATLANTA, GEORGIA 30303

IE Inspection Report No. 50-324/75-06

Licensee: Carolina Power and Light Company
336 Fayetteville Street
Raleigh, North Carolina 27602

Facility Name: Brunswick 2
Docket No.: 50-324
License No.: DPR-62
Category: B2

Location: Southport, North Carolina

Type of License: 2436 Mwt, BWR, G-E

Type of Inspection: Special, Announced

Dates of Inspection: May 5-9, 1975

Dates of Previous Inspection: April 22-25, 1975

Principal Inspector: F. S. Cantrell, Reactor Inspector
Facilities Section
Facilities Test and Startup Branch

Accompanying Inspectors: None

Principal Inspector: _____ 5/28/75
F. S. Cantrell, Reactor Inspector — Date
Facilities Section
Facilities Test and Startup Branch

Reviewed By: _____ 6/2/75
F. J. Long, Chief — Date
Facilities Operations Branch

SUMMARY OF FINDINGS

I. Enforcement Items

None

II. Licensee Action on Previously Identified Enforcement Matters

Not inspected.

III. New Unresolved Items

None

IV. Status of Previously Reported Unresolved Items

Not inspected.

V. Unusual Occurrences

None

VI. Other Significant Findings

Organizational Changes

Mr. J. R. Holder was promoted to a newly created position of Superintendent-Operations, Maintenance and Engineering. He reports to the plant manager.

Deviation From FSAR Commitments

During an inspection of firestops, numerous locations were observed which appeared to deviate from the fire retardant barrier installation commitment made in the Brunswick 1 and 2 FSAR, page M 8.5-9 (Details, Paragraph 3).

VII. Management Interview

An exit interview was conducted on May 9, 1975 with Messers. Hollowell, Holder and Starkey.

The inspector reviewed the results of the inspection concerning the two Reactor Blowdowns (Details, Paragraph 2), and the status of the fire stops (Details, Paragraph 3).

DETAILS

Prepared by: F. S. Cantrell, Reactor Inspector 5/29/75 Date
Facilities Section
Facilities Test and Startup Branch

Dates of Inspection: May 5-9, 1975

Reviewed by: R. C. Lewis, Senior Inspector 5/29/75 Date
Facilities Section
Facilities Test and Startup Branch

1. Persons Contacted

a. Carolina Power and Light Company

N. B. Bessac - Manager, Bulk Power Supply
E. G. Hollowell - Plant Manager
J. R. Holder - Startup Supervision
W. C. Rowles - Operations Supervisor
A. M. McCauley - Engineering Supervisor
R. Stanley - QA Supervisor

b. Brown and Root, Inc. (B&R)

Bill Wormington - Project Electrical Engineer
John Propson - Engineer

c. General Electric

C. R. Dietz - Operations Manager
K. Brown
J. L. Miller - Startup Engineer

2. Reactor Blow Downs

A reactor blowdown occurred April 29, 1975, from approximately 10% power when the B relief valve (RV) lifted for no apparent cause and failed to reseat. (Abnormal Occurrence Report from CP&L dated May 16, 1975). A second blowdown occurred May 6, 1975, from about 600 psi while restarting the plant from the April 29, 1975 blowdown. The inspector reviewed CP&L's investigation of first event and portions of the second event, including instrument charts and computer printouts. The following items appeared to be pertinent to these events:

a. The first alarm received was high torus level and the second alarm was high temperature in the torus. Each relief valve discharge line has a thermocouple in the line to detect relief valve leakage by measuring the temperature, and to provide an alarm when a relief valve opens. The temperature in each "tail pipe" is recorded sequentially on a multipoint recorder. The high "tail pipe" temperature alarm which comes off the recorder, is normally set 50°F above the maximum temperature being measured, however, the proper setting had not yet been determined in the startup program. As a result, the alarm was on because of a high ambient temperature in another "tail pipe." When the "B" relief valve opened another alarm for high tail pipe temperature was not initiated.

b. Relief valve operations are not monitored by the computer, or other annunciators. At the time of both blowdowns, one main steam bypass valve to the condensor was open. The closing of the steam bypass valve (as a result of the relief valve opening) was recorded on the computer. This provided the time that the relief valve opened.

c. When it was determined that a relief valve was stuck open and would not reseat during the first blowdown (about 10 minutes after the RV opened), the reactor was not scrammed immediately as required by Emergency Instructions EI-40. The main steam isolation valves were closed about 20 minutes after the relief valve opened. This action scrammed the reactor. A licensee representative stated that this action was taken to minimize the cooldown rate since the reactor contained a new core with very little exposure and very low decay heat removal requirements. During this period, EI-40 requires that the reactor be scrammed as soon as it is recognized that the RV will not close, or if the suppression pool temperature reached 110°F. EI-40 also requires initiating all available RHR heat exchangers in suppression pool cooling mode as soon as possible. An attempt was made to initiate fuel pool cooling with the "A" loop; however, the suction valve would not open. Fuel pool cooling was not established with "B" loop until 12:40 p.m., 18 minutes after the relief valve opened. The computer showed that the "C" RHR service water pump started at that time. Operation of the RHR pumps was not monitored by the computer. During the second blowdown, the operator promptly scrammed the reactor and initiated torus cooling as required by procedure EI-40. (The failure to follow procedures was identified by the licensee as an item of noncompliance with Technical Specification 6.8, and reported to IE:II as an abnormal occurrence in CP&L letter dated May 16, 1975.)

d. Following the first blowdown the specific cause of the RV sticking open was not determined, however, iron oxide was found in the

pilot valve and in the second stage of the relief valve. No other abnormalities were detected; therefore it was concluded that the iron oxide had caused the problem. The pilot valve and the second stage of all other RV's, except "A" RV, were disassembled and cleaned. ("A" RV was cleaned during a reactor outage about April 1, 1975). Following the second blowdown on May 6, 1975, the solenoid valve that supplies air for manual operation was still blowing when "B" valve was initially examined indicating that the solenoid valve was stuck in an intermediate position. Piston inspection of the partially disassembled solenoid valve showed that an O-ring was not seated on the piston that closes the exhaust air port and connects to the piston that admits air to the relief valve. This same O-ring was found partially seated in five of the other ten solenoid valves. During a "Bench Test" of the "B" solenoid valve, the solenoid valve piston would intermittantly stick in the intermediate position. The necessary replacement parts were obtained and installed under the direction of the manufacturer representative. The onsite QA group monitored the repair of the relief valves including the solenoid valves using a procedure with hold points developed for this job.

Each solenoid was functionally tested following repair, and each relief valve was scheduled to be functionally tested at 250 psi and flow tested at approximately full pressure (1005 psi) during the subsequent startup.

e. When the main steam isolation valves were closed, the turbine driven reactor feedwater pumps were tripped off by the loss of steam to drive the pumps; however, the pumps continued to coast down. While the high pressure feedwater heaters were being valved out, the operator bumped the control for the high pressure heater bypass valve. The bypass valve opened full, allowing reactor level to increase to the point that the main steam lines flooded. The controls for the heater bypass valve are on the control board between the controls for the high pressure heater isolation valves.

f. Technical Specifications limit the cooldown rate to 100° per hour. With the "B" relief valve open, temperature decreased from 517°F to 314°F in 10 minutes. A site vendor representative determined that this rate was less severe than the loss of feedwater pump with main steam isolation valve closure (320° in 3 minutes 40 seconds) that was evaluated as part of the vessel thermal cycle analysis.

g. Following the first blowdown, a visual inspection was made of the suppression pool including the welds where the "tail pipe" passes thru the downcomer vent header, and below the water level in the torus using a diver. No damage or defects were identified.

3. Inspection of Fire Stops

a. Construction Drawings

(1) Specifications

The general details of fire stops are specified in the FSAR, Appendix M, Reply to Question 8.5(6)b., and specific details are provided in United Engineers and Constructors Specification No. 9527-01-48-1.

(2) Location

The specific location of fire stops, and the type to be used at that location is specified on separate area installation prints that show penetrations.

b. Material Specifications

Paragraph C.h.3) of Section V of Specification 9527-01-48-1 specifies the cable coating to be used in the fire stops shall be "Flamemastic 71A" as manufactured by Dyna-Therm Corporation of Los Angeles, California, or equivalent and paragraph C.h.6) of Section V specifies the cellular concrete used in the fire stops shall be as manufactured and installed by Darbron Corporation of Houston, Texas or equivalent. Flamemastic 71A was purchased from Dyna-Therm Corporation, and the cellular concrete was purchased, and installed by Darbron Corporation.

c. Material Qualifications

Test conducted to demonstrate the characteristics of flamemastic are discussed in the following reports:

(1) United States Government Memorandum dated April 23, 1970, Ser. 1311-6158F, "Flame Propagation Test of Navy Shipboard Cables coated with Dynatherm Corporation Flamemastic; report on" (in a fire initiated with a piece of burlap soaked in transformer oil, the flamemastic treatment "buys time" by maintaining circuit integrity)

(2) Florida Power and Light Company Test No. 21-M-7, dated October 18, 1967, "Sprayable Fireproofing." (The flamemastic material completely protected the multiconductor control cables during a very hot oil fire for five minutes.)

(3) Factory Mutual Research Corporation report dated July 22, 1970, "Flamemastic 71A from Dynatherm Corporation" (Flamemastic does not cause excessive heating of cables and will prevent the spread of fire when exposed to an ignition source, and meets Factory Mutual approval requirements)

(4) Fire Research Laboratory, University of Ghent, Belgium Test Report Nos. 835/1 and 835/2, dated April 23, 1970 and April 24, 1970, "Fire Barrier Test for Cable Wall Penetrations" and "Surface Flammability of Materials Test." (These tests showed that "for the two hour test period, the flamemastic flame barrier proved an effective means to contain a fire within a given area" and ". . . protected cables obtained a Class I rating. No ignition of cables.")

(5) Franklin Institute Research Laboratories Final Report F-C3231, dated December 1971, "Flame Test of Irradiated and Non-irradiated Protective Coatings for Electric Cables." (No significant differences were noted in the appearance or performance of irradiated on non-irradiated samples.)

No qualifications were provided for the cellular concrete for fire stops.

d. Assembly Qualifications

The tests in C.(4) (above) established a two hours rating for a flamemastic fire stop (Dyna-Therm letter to UE&C dated January 18, 1971)

e. Installation

The UE&C Specification No. 9527-01-48-1 provided the detail specification for installing the fire stops, and special marked up area prints showed the type firestop for each location. No specific procedure was written for the installation. The cellular concrete was installed by the vendor. The flamemastic fire stops are being installed by CP&L's constructor, Brown and Root, Inc.

No special instructions or safety criteria were identified in Specifications 9527-01-48-1. The material used for fire stops was purchased by UE&C as specified in the "Specifications." No certifications were obtained or requested.

f. Inspection and QC Requirements

QA reports of "Inspection for Conformance of Fire Stops and Seals in Unit 2" were provided for the inspector's review. These

reports were prepared by the constructor QA group were for the installation of cellular concrete in the plant and flamemastic cable coating in the diesel generator building. A licensee representative and the inspector concurred that these reports showed that these penetrations initially were ready for the fire stop installation - not that the fire stop had been installed and was acceptable.

The fire stops were not reverified during plant turnover, and there is no schedule for periodic reinspection.

g. Plant Modifications

Plant procedures for approval of modifications, including rerouting cables that breach a fire stop, require Quality Assurance Supervisor, and Plant Nuclear Safety Committee approval prior to implementing the change. There are no procedures that spell out how to remove cables from fire stops, or require repair of firestops and reinspection following completion of the work.

h. Installation of Fire Stops

A visual inspection was made of the fire stops in the diesel generator building, the reactor building, the control building, the turbine building and the radwaste building on May 5-9, 1975. The penetration firestops were compared with Specification No. 9527-01-48-1, and the individual area prints. The location of penetrations on the points were compared with the as build location. The results are as follows:

(1) Diesel Generator Building

Most of the cable coating, (flamemastic) has been applied as specified; however, new cables have been pulled and/or insufficient flamemastic has been applied to five fire stops out of a total of fifty-two fire stops inspected. In addition, eleven penetrations contained holes or sleeves that were not plugged in accordance with CP&L specifications. Four fire stops were identified with the wrong material, and one penetration was not specified, and contained an open sleeve. Three conduits were identified with the conduit cover removed.

(2) Reactor Building

During the inspection, work was in progress to apply flamemastic to fire stops in the reactor building. The following indicates the status at the time of the inspection:

At + 80 elevation, all of the penetration inspected contained one or more openings that did not meet CP&L specifications. At + 50 elevation, six of nine penetrations inspected contained one or more improperly sealed openings, and/or incomplete flamemastic coating. Of nineteen fire stops inspected at + 17 and + 20 elevation, seven penetrations contained improperly sealed openings, and/or incomplete flamemastic coating. (Four penetrations were not accessible for inspection). In the reactor building tray covers were not installed as specified on at least five vertical penetrations. Three penetrations contained unspecified material (i.e. ductseal, urathane foam, etc.)

(3) Control Building

Of twenty fire stops identified and inspected, eleven contained openings that were not sealed or were improperly sealed.

The flamemastic coating had not been applied to any cables. A sampling inspection of openings in the floor of control room cabinets showed about 10% unsealed. An unspecified foam backing material was found in one vertical firestop.

(4) Turbine Building

Of fifty-six fire stops inspected, fifty-two contained openings that were not sealed and/or an incomplete coating of flamemastic.

(5) Cable Tunnel

Flamemastic had not been applied to the cables in the cable tunnel. The specifications require a coating of at least ten feet every fifty feet. Eleven of fifteen penetrations were not plugged. One large group of penetrations at the end of the tunnel was not plugged or coated, and was not shown on the installation prints provided.

(6) Radwaste Building

Sixty-four fire stops were inspected in the radwaste building. Fourteen of the fire stops inspected contained one or more unsealed openings and/or incomplete flamemastic coating. Several penetrations were identified in the field that did not show on the installation prints. A large number of penetrations shown on the installation prints were not used.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
230 PEACHTREE STREET, N. W. SUITE 818
ATLANTA, GEORGIA 30303

IE Inspection Report No. 50-261/75-8

Licensee: Carolina Power and Light Company
336 Fayetteville Street
Raleigh, North Carolina 27602

Facility Name: H. B. Robinson 2
Docket No.: 50-261
License No.: DPR-23
Category: C

Location: Hartsville, South Carolina

Type of Licenses: PWR (W), 700 MWe, 2200 MWT

Type of Inspection: Special, Announced

Dates of Inspection: May 5-6, 1975

Dates of Previous Inspection: April 29-30, 1975

Principal Inspector: N. E. Bender, Reactor Inspector
Facilities Operations Branch

Accompanying Inspectors: None

Other Accompanying Personnel: None

Principal Inspector: N E Bender 5-22-75
N. E. Bender, Reactor Inspector
Facilities Operations Branch
Date

Reviewed by: F J Long 5/29/75
F. J. Long, Chief
Facilities Operations Branch
Date

AMERICAN REVOLUTION BICENTENNIAL 1776-1976

SUMMARY OF FINDINGS

I. Enforcement Items

None

II. Licensee Action on Previously Identified Enforcement Matters

Not inspected

III. New Unresolved Items

None

IV. Status of Previously Unresolved Items

Not inspected

V. Unusual Occurrences

None

VI. Other Significant Findings

None

VII. Management Interview

The findings of the inspection were discussed with Mr. J. B. McGirt and members of his staff on May 8, 1975.

DETAILS I

Prepared by: Neal E. Bender 5-22-75
N. E. Bender, Reactor Inspector Date
Facilities Operations Branch

Dates of Inspection: May 5-6, 1975

Reviewed by: 5/29/75
F. J. Long, Chief Date
Facilities Operations Branch

1. Individuals Contacted

J. McGirt - Plant Manager
K. Young - Electrical Engineer
W. Traylor - Mechanical Engineer

2. The purpose of this special inspection was to determine the requirements and commitments relating to compartment boundary seals for electrical penetrations for this facility, and to determine conformance to those requirements.

3. Facility Construction Specifications

Section 8.2.2, Power Distribution System, of the H. B. Robinson FSAR contains the paragraph "To prevent spread of flame, fire barriers of glass wool packed around trays on approximately 10 foot spacing in vertical runs has been provided. Fire barriers of similar construction are used in all trays when they penetrate walls."

The licensee's answer to Question VF, in the response to AEC Questions, relating to reactor trip and engineered safety features circuitry, contains the sentence "In instances where physical conditions prohibit horizontal separation, horizontal fire barriers are provided."

The licensee is unable to locate any documentation to show that the commitments of the FSAR were met during construction. The inspector requested to see the following type documentation and was informed that it was not available.

a. Construction drawings or specifications showing the location, type, number, materials and assembly details of the barriers.

b. Material specifications to include procurement specifications and fire resistant characteristics.

c. Material qualifications by Mil-Spec or other approved tests.

d. Qualification of an actual or simulated assembly through testing.

e. Procedure for initial installation and material application.

f. Application of fire retardant coating on safety related cables in vicinity of fire barriers.

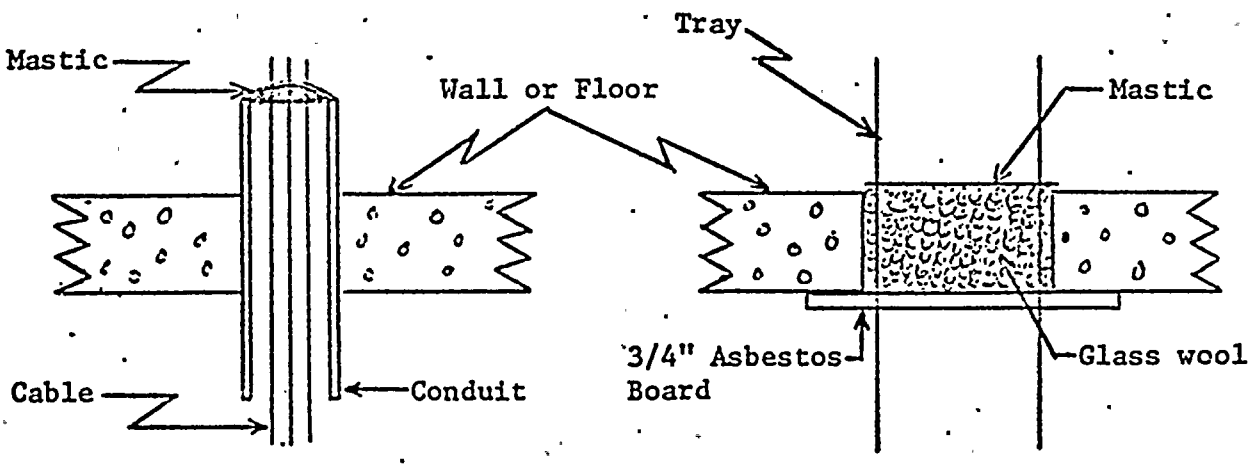
CP&L has contacted the Architect Engineer, Ebasco Services, to obtain documentation on the design and installation of the barriers to include the above items. It is the understanding of the inspector that Ebasco has quoted a price for the work and CP&L is preparing a purchase order.

4. Maintenance and Modification Procedures

The licensee does not have procedures for inspection, maintenance or repair of existing barriers. Numerous cases of barrier breaching are discussed in item 5, below. Procedures do not exist for installation of fire barriers when new wall or floor penetrations are established for cables required by plant modification.

5. Visual Inspection

A visual examination of the installed barriers was conducted by the inspector to determine the as-is status. Two basic type wall penetrations were identified. Conduit and tray.



a. Conduit

The licensee and the inspector estimate that approximately 50 percent of the conduits containing safety related cable have been sealed as shown in the sketch, with the remainder unsealed. The requirements for sealing, and the material used is unknown. Most unused conduits were capped but numerous instances were noted where caps were missing.

b. Trays

Barriers for floor penetrations from the control room down to the cable spreading room have asbestos board on the underside of the floor with a mastic applied on the upper side over glass wool. The following was noted by the inspector.

(1) Much of the mastic has been broken while some is missing.

(2) Barriers were not established when the Axial Power Distribution Monitoring System Panel and The Turbine Startup Panel were installed in the control room.

(3) A modification in The Radiation Monitor Panel caused breaching of its barrier and was not repaired.

Except in isolated instances it appears that fire stops were provided for all wall and floor penetrations throughout the plant for safety related cables. In some hard to get at places the mastic was poorly applied. Numerous barriers have been breached through plant modification or maintenance and not returned to their original status. The unavailability of documentation showing original specifications and requirements is the licensee's reasons for not repairing breached barriers or installing barriers for new penetrations.

6. Licensee Actions Requested by IE Bulletins 75-04 and 75-04A

Response to these two bulletins was provided in CP&L letter dated April 24, 1975. It was stated that final response to 75-04A would be completed by July 31, 1975, with progress reports submitted monthly. It would be expected that all the construction documentation would have been received from Ebasco and the necessary corrective action taken regarding the deficient barriers by that date.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
230 PEACHTREE STREET, N. W. SUITE 818
ATLANTA, GEORGIA 30303

IE Inspection Report Nos. 50-269/75-6, 50-270/75-7 and 50-287/75-7

Licensee: Duke Power Company
Power Building
422 South Church Street
Charlotte, North Carolina 28201

Facility Name: Oconee Units 1, 2 and 3
Docket Nos.: 50-269, 50-270 and 50-287
License Nos.: DPR-38, 47 and 55
Category: C, C and B2

Location: Seneca, South Carolina

Type of License: B&W, PWR, 2568, Mw(t)

Type of Inspection: Special, announced

Dates of Inspection: April 30 - May 2, 1975

Dates of Previous Inspection: April 22-25, 1975

Principal Inspector: _____ 5/13/75
T. N. Epps, Reactor Inspector
Facilities Operations Branch
Date

Accompanying Inspectors: None

Reviewed by: _____ 5/13/75
F. J. Long, Chief
Facilities Operations Branch
Date

AMERICAN REVOLUTION BICENTENNIAL 1776-1976

SUMMARY OF FINDINGS

I. Enforcement Items

None

II. Licensee Action on Previously Identified Enforcement Matters

Not inspected.

III. New Unresolved Items

None

IV. Status of Previously Reported Unresolved Items

Not inspected.

V. Other Significant Findings

Oconee-2 reactor coolant flow appears to be close to the calculated core lift valve. This item will be referred to the Office of Reactor Regulation (Licensing).

VI. Management Interview

A management interview was held on May 2, 1975, with Mr. J. E. Smith and members of his staff. The fire stop inspection and the Unit 2 flow problem were discussed.

Further discussions were held with licensee corporate management, on May 8, 1975, concerning control of flamable materials and smoking in the cable spreading rooms and equipment rooms.

DETAILS I

Prepared by: _____ 5/23/75
T. N. Epps, Reactor Inspector
Facilities Operations Branch
Date

Dates of Inspection: April 30 - May 2, 1975

Reviewed by: _____ 5/23/75
F. J. Long, Chief
Facilities Operations Branch
Date

1. Individuals Contacted

Duke Power Company (DPC)

J. E. Smith - Manager, Oconee Nuclear Station
J. W. Hampton - Director, Administrative Services
L. E. Schmid - Operating Superintendent
O. S. Bradham - Maintenance Superintendent
R. M. Koehler - Technical Services Superintendent
T. S. Barr - Technical Services Engineer
H. Hobs - Junior Field Engineer, Construction
J. W. Davis - Field Engineer, Construction

2. Fire Stops

This part of the inspection involved obtaining information on fire stops used at Oconee. The Oconee FSAR, Section 8.2.2.13.g, states that floor sleeves will be filled with a fire retardant material. Section 8.2.2.13.h states that wherever physically possible, metallically armored and protected cable systems will be used and that with this type construction fire stops as such are not required. The licensee, however, is presently installing and reworking fire stops in the following areas: (a) turbine building to auxiliary building, (b) electrical equipment room walls, (c) electrical equipment room ceiling to cable room, (3) cable room walls, and (e) cable room ceiling to control room. Information presented herein concerns practices and materials presently being used by the licensee.

a. Materials

The following materials are being used in fire stops at Oconee:

(1) Flamemastic - is a fire resistant material sprayed on safety related control cables crossing power cable trays. This material is commercially available and tested by a method that follows in principle American Standard ASTM E-119.

(2) Glastic - is a UL recognized flame retardant glass mat polyester laminate. The thickness used at Oconee is 1/8 inch. This material was tested according to ASTM D-229 Method I.

(3) Monokote -5 - is a plaster like material used for fire proofing and tested and rated by Underwriters' Laboratories, Inc. in accordance with test method ASTM E119. A 2-1/2 inch thickness provides fire proofing for approximately 4 hours. The licensee uses a minimum of four inches in fire stop applications.

(4) Armaflex - is a rubber like material used in approximately 1 inch thick sheets for sealing against air flow. It retards burning and has been tested per ASTM D 1692 and by the licensee with a torch.

The above materials are commerically available and are purchased through a local contractor.

b. Installation

A licensee representative stated that efforts were recently initiated to upgrade fire stops at Oconee. This is being conducted in two phases. All open penetrations through walls that are fire barriers are to have fire stops installed. The inspector observed several 6 inch diameter penetrations in the cable spreading room ceilings that opened into the control rooms above that did not have fire stops installed. The licensee stated that installation of fire stops would be completed in about three weeks.

The second phase involves reworking old fire stops and adding Monokote to a minimum thickness of 4 inches.

Several configurations are planned for fire stops at Oconee as follows:

(1) Where cable trays penetrate walls, either Armaflex or 1/8 inch thick Glastic for air sealing and a minimum of 4 inches of Monokote for fire stops will be used.

(2) Where empty pipe sleeves in floors or walls exist 1/4 inch thick steel plates will be tack welded in place to cover these openings.

(3) Where pipe sleeves with cable, piping or instrument lines exist Monokote held in place by wire and steel supports will be used. Some will have approximately 2 inch conduit installed for temporary instrumentation cables and asbestos cloth will be used as packing.

(4) Small cable shafts between the cable spreading rooms and the control rooms will be sealed with 1/8 inch Glastic and Monokote.

A licensee representative stated that no testing has been accomplished on fire stop assemblies.

c. Administrative Items

It appears that there is no specific requirement for repair of fire stops and re-inspection of reworked areas at Oconee. A licensee representative stated that such a requirement is being considered.

Licensee representatives stated that there is no requirement against smoking or control of flamable materials in the cable spreading rooms or equipment rooms. Concern was expressed with regard to this policy to Duke Power Company corporate management by telephone on May 8, 1975.

The licensee response to IE Bulletin 75-04 and 75-04A has been received by Region II. Licensee corporate management stated, on May 8, 1975, that an additional response to bulletin 75-04A would be submitted after additional review of the subject is completed on June 16, 1975.

3. Oconee 2 Reactor Coolant Flow

The licensee reported that indications of Unit 2 reactor coolant flow, from a secondary system heat balance were above the core lift valve of 11.9% of design flow but that instrumentation problems were suspected.

On May 4, 1975, the licensee reported that, after further testing of instrumentation used in heat balance determinations, the Unit 2 flow appeared to be 111.5% of design flow. Further testing is being conducted by the licensee to attempt to verify whether or not core lift is occurring.

This matter has been referred to the Office of Nuclear Reactor Regulation (Licensing) for further review.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
230 PEACHTREE STREET, N. W. SUITE 818
ATLANTA, GEORGIA 30303

RO Inspection Report No. 50-250/75-7
and 50-251/75-7

Licensee: Florida Power and Light Company
4200 Flagler Street
P. O. Box 013100
Miami, Florida 33101

Facility Name: Turkey Point 3 and 4
Docket No.: 50-250 and 50-251
License No.: DPR-31 and DPR-41
Category: C/C

Location: Dade County, Florida

Type of License: W PWR-760 Mwe, 2200 Mwt

Type of Inspection: Special Announced

Dates of Inspection: May 12-14, 1975

Dates of Previous Inspection: April 15-18, 1975

Principal Inspector: A. K. Hardin, Reactor Inspector
Facilities Operations Branch

Accompanying Inspector: None

Other Accompanying Personnel: None

Principal Inspector: A. K. Hardin 5/21/75
A. K. Hardin, Reactor Inspector — Date
Facilities Operations Branch

Reviewed By: F. J. Long 5/27/75
F. J. Long, Chief — Date
Facilities Operations Branch

AMERICAN REVOLUTION BICENTENNIAL 1776-1976

SUMMARY OF FINDINGS

I. Enforcement Items

None

II. Licensee Action on Previously Identified Enforcement Matters

Not within the scope of this inspection.

III. New Unresolved Items

None

IV. Status of Previously Reported Unresolved Items

Not within the scope of this inspection.

V. Unusual Occurrences

None

VI. Other Significant Findings

During an inspection of cable tray penetrations, two locations were observed which appeared to deviate from the fire stop installation commitment made in the FPL FSAR, page 8.2-9. (See Details I, paragraph 3d and 3e).

VII. Management Interview

The findings, including the apparent deviations from the FPL FSAR, of the special inspection were discussed with FPL management representatives listed in the Details.

DETAILS I

Prepared By: A. K. Hardin 5/22/75
A. K. Hardin, Reactor Inspector — Date
Facilities Operations Branch

Dates of Inspection: May 12-14, 1975

Reviewed By: F. J. Long 5/23/75
F. J. Long, Chief — Date
Facilities Operations Branch

All information in the details applies equally to Turkey Point 3 and 4 except where information is identified with a specific reactor.

1. Individuals Contacted

*H. E. Yaeger - Plant Manager
*J. K. Hays - Plant Superintendent, Nuclear
*J. E. Tucker - Maintenance Superintendent
*D. W. Jones - Quality Control Supervisor
H. J. Dager - Manager, Power Resources, Nuclear
V. T. Chilson - Power Resources Specialist
W. A. Thue - System Operations Engineer
D. Van Tassel - Plant Electrical Engineer

*Present at management exit interview.

2. Scope of Special Inspection

The purpose of this inspection was to review requirements for compartment boundary fire stops for electrical penetrations and the extent to which the facility conforms to the requirements.

3. Requirements and Verification of Compliance

"The Turkey Point FSAR, Section 8, page 8.2-9 states, cable trays passing through walls or floors are provided with fire stops as shown in Figure 8.2-19." (See Figures 1 and 2 attached to this report) "A similar fire stop is provided where cables pass through floor slots, such as under control panels. A thermal resistant coating (such as Flamemastic 71A) is applied to cables in the cable spreading room, and to cables inside and outside the containment in the penetration area".

A construction installation procedure dated 4/10/70 identified as Job No. 5610, Dwg 5610-E-310, states in Section III, "Raceways passing through walls, ceilings, or floors shall have a fire stop such as shown on Florida Power and Light drawing A-G0-4 and A-G0-5." These drawings are the same as shown in the FSAR and are appended as Figures 1 and 2 of this report.

Only the above listed general statements regarding location of fire stops were made available to the inspector. The licensee stated that no master list of fire stop locations existed.

An inspection was conducted to determine the application and extent of application of fire retardant coatings and the location and construction of fire stops. The inspection covered the following areas.

(a) Fire stops for power cables from the unit auxiliary transformer through the wall of the 4160V switch gear room were examined. Fire stops, as described in Figures 1 and 2 attached, were in place and were in good condition.

(b) Fire stops for Power control cables from the 4160V switch gear room to the 480 volt switch gear were examined. The fire stops were in place. Some new power cables had been run from the 4160V switch gear to newly installed condensate pumps. These cables were not sprayed with Flamemastic. Inside both 4160V and 480V switch gear room, it was observed some cable trays were completely sprayed with Flamemastic fire retardent while others were not. The licensee did not have an explanation for the difference.

(c) The Diesel Generator building was inspected. All cables into and out of the building are run in conduit. No open raceways or trays are used.

(d) Control Rod Drive Rooms were examined. One tray of control cables in the Unit 3 control rod drive room did not have a fire stop

(e) Cable trays entering and exiting the auxiliary building were examined. Four large cable trays enter the auxiliary building above the main corridor doors. The cables and trays are sprayed with Flameastic 71A for a distance of about 2 feet inside and outside the wall but the trays do not have fire stops. Those cable trays exiting the auxiliary building did not have fire stops installed.

(f) The cable spreading room was examined. All cables and trays in the room are sprayed with Flamemastic fire retardant. All fire stops where raceways enter and leave the room were in good condition. Other ductwork in the cable spreading room such as air conditioning ducts were sprayed with Flamemastic fire retardant.

4. Maintenance and Modification Procedures

The inspector concluded from observation and discussions that prior to the recent severe fire at a nuclear plant that FPL did not have a maintenance and modification procedure which specifically addressed breaching of firestops. The licensee has recently approved a procedure entitled "Fire Stop and Cable Tray Fire Proofing". The procedure names the Superintendent-Maintenance as the cognizant management member to authorize breaching a fire stop. The procedure further defines the construction details of the fire stop design to be used.

5. Site Inspection

The details of examination of the cable trays fire stops are discussed in item 3, above. In discussions with the licensee, the inspector was informed that major program of examining and reworking all firestops was underway. It is the licensee's intent to build fire stops on all entries and exits without regard to safety or non-safety related equipment. The licensee further stated that they intend to replace the transite fire stop material with "Marinite" because of its improved resistance to moisture uptake, and to spray cables with fire retardant a distance of 8 feet where practical rather than the two feet shown on Figures 1 and 2.

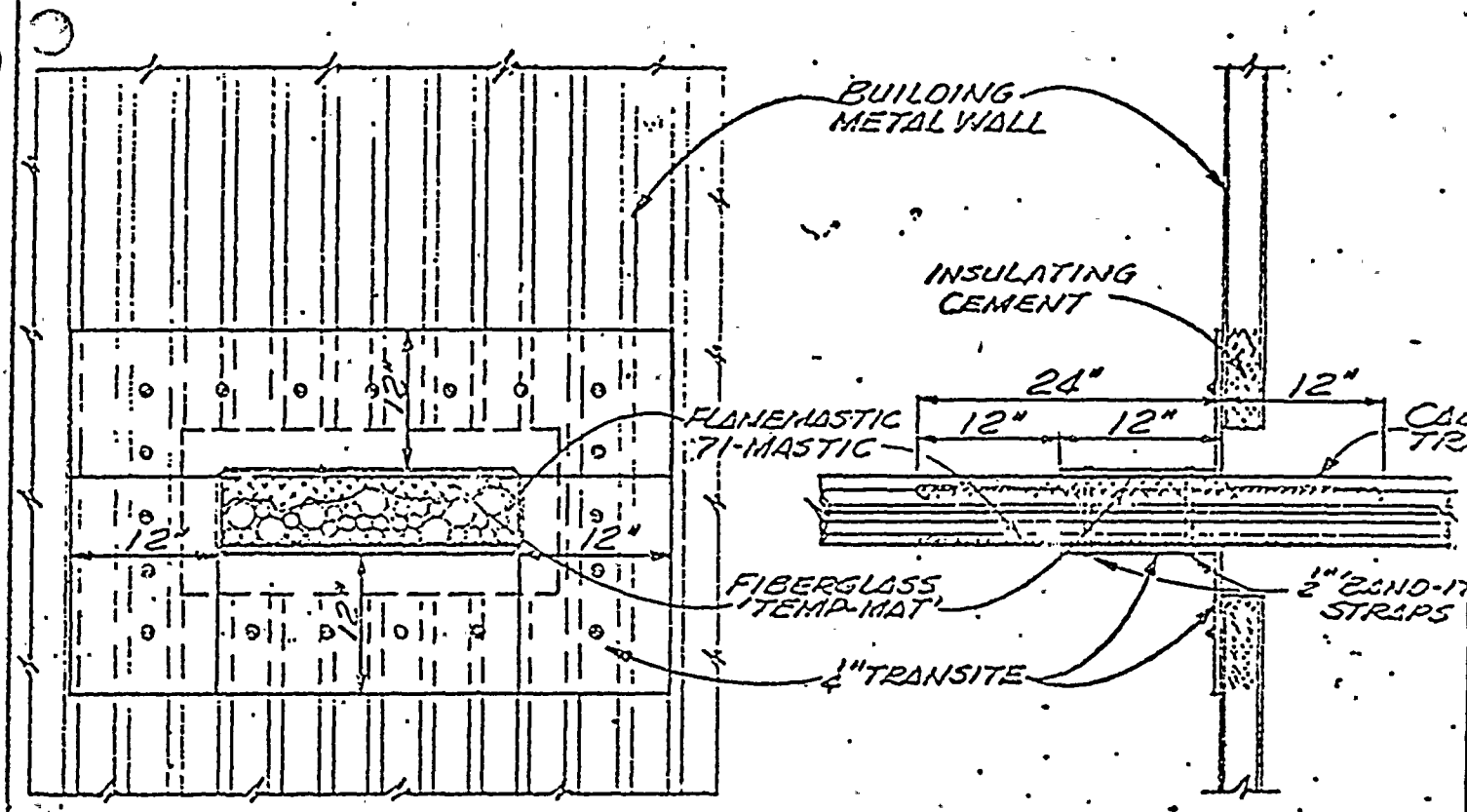
6. Material Specifications for Fire Stops

The licensee uses Flamemastic 71A, fiberglass, transite, and Marinite in construction of the firestops. The licensee procures these materials by tradename. The inspector concluded from specifications provided to the licensee by the vendors, and from copies of tests of the materials conducted by FPL and independent testing agencies that the materials of construction are flame retardant and will not of themselves support combustion.

7. Licensee Actions on IEB's 75-04 and 75-04A

The subject bulletins required the licensee to evaluate certain fire protection measures and protection from events which might occur as a result of a fire. The licensee responded to these bulletins on April 23, 1975. The licensee concluded in his response that their policies, plans, procedures and systems provided the required control and protection. During the inspection, the response was discussed with members of FPL management. The inspector stated that the response did not contain sufficient information to permit a reasonable evaluation by the NRC that the utilities conclusions were justified. The licensee agreed to prepare a supplemental report which would contain a listing of the procedures and other documentation supporting their position. The inspector accepted a supplemental report submittal date of June 27, 1975.

FIGURE - 1



Installation Notes

1. Trowel "Flamemastic-71" mastic into accessible voids in top and bott of cable tray for a distance of 24 inches outside and 12 inches insi wall line. Cover exposed cable layer with a minimum of 1/8" mastic.

2. Install 12 inch wide, 1/4" Transite flashing around all four sides c cable tray. Fasten Transite flashing to building exterior wall usin No. 10 sheet metal screws with backing washers.

3. Fill any remaining void in top side of cable tray, for a distance of 12 inches outside building wall, with inorganic insulating material such as, Pittsburgh-Corning fiberglass 'Temp-Mat'.

4. Install 12 inch long, 1/4" Transite, top and bottom covers held in place with two (2) 1/2" stainless steel "Band-it" straps.

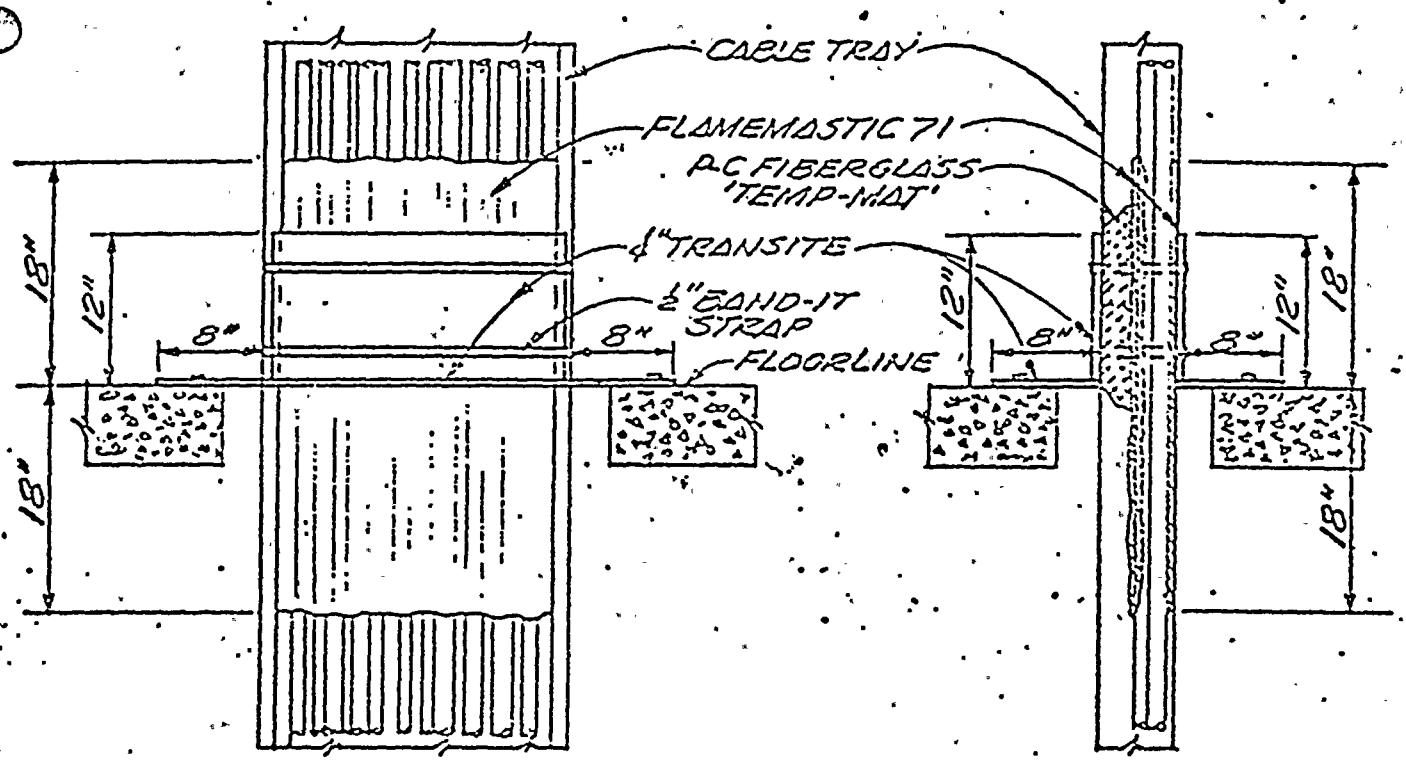
5. Fill all voids in corrugated metal wall, behind Transite flashing, w insulating cement.

6. See Sheet 2 for material suppliers.

NO.	DATE	REVISION	BY	CH	CONR	APP

Steam Plants - General
Fire Stop and Air Seal
Cable Tray Wall Penetration
FLORIDA POWER & LIGHT COMPA
DATE February 20, 1969
SCALE None
Sheet 1 of 2 REV. 1 - 3/1

FIGURE - 2



Installation Notes

1. Trowel Flamemastic 71 Mastic into accessible voids in front and back of cable tray for a distance of 18 inches above and below floor line Cover exposed cable layer with a minimum of 1/8" mastic.

2. Install 8 inch wide, 1/4" Transite flashing around all four sides of cable tray at floor line. Attach Transite flashing to floor using suitable anchors and 1/4" bolts with backing washers..

3. Fill any remaining void in front side of cable tray, for a distance 12 inches above floor line, with inorganic insulating material such Pittsburgh-Corning fiberglass 'Temp-Mat'.

4. Install 12 inch long, 1/4" Transite, front and back covers, held in place with two (2) 1/2" Stainless steel 'Band-it' straps.

5. Flamemastic 71 mastic available in 5 gal. pails from:
   The Dyna-Therm Corp.
   598 West Ave. Twenty-Six
   Los Angeles, California 90065

6. Pittsburgh-Corning fiberglass "Temp-Mat" available in 1/2" and 1" thickness from
   North Brothers Insulation Co.
   5641 N.W. 6 Avenue
   Fort Lauderdale, Florida

NO.	DATE	REVISION	BY	CH	CORR	APP

Steam Plants - General
Fire Stop and Air Seal
Cable Tray Floor Penetratio
FLORIDA POWER & LIGHT COMPA
DATE February 20, 1969
SCALE None
SHEET 2 of 2 REV. 1 - 3/1

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
230 PEACHTREE STREET, N. W. SUITE 818
ATLANTA, GEORGIA 30303

IE Inspection Report Nos. 50-280/75-7 and 50-281/75-6

Licensee: Virginia Electric and Power Company
P. O. Box 26666
Richmond, Virginia 23261

Facility Name: Surry Power Station
Docket Nos: 50-280 and 50-281
License Nos.: DPR-32 and DPR-37
Category: C/C

Location: Surry, Virginia

Type of License: PWR (W) - 822 MWe, 2441 MWt

Type of Inspection: Special, Announced

Dates of Inspection: April 16-18 and May 1, 1975

Principal Inspector: M. V. Sinkule, Reactor Inspector
Facilities Operations Branch

Accompanying Inspectors: None

Other Accompanying Personnel: None

Principal Inspector: M. V. Sinkule 5/19/75
M. V. Sinkule, Reactor Inspector
Facilities Operations Branch
Date

Reviewed by: F. J. Long 5/23/75
F. J. Long, Chief
Facilities Operations Branch
Date

AMERICAN REVOLUTION BICENTENNIAL 1776-1976

SUMMARY OF FINDINGS

I. Enforcement Action

None

II. Licensee Action on Previously Identified Enforcement Matters

Not within the scope of this inspection.

III. New Unresolved Items

None

IV. Status of Previously Reported Unresolved Items

Not within the scope of this inspection.

V. Unusual Occurrences

None

VI. Other Significant Findings

None

VII. Management Interview

The inspection findings were discussed with T. L. Baucom, Superintendent, Station Operations, and others of his staff on May 1, 1975, as described in the details section of this report.

DETAILS I Prepared by: M. V. Sinkule 5/23/75
M. V. Sinkule, Reactor Inspector Date
Facilities Operations Branch

Dates of Inspection: April 28 to May 1, 1975

Reviewed by: F. J. Long 5/23/75
F. J. Long, Chief Date
Facilities Operations Branch

All items pertain equally to Surry 1 and Surry 2 unless otherwise designated.

1. Individuals Contacted

Virginia Electric and Power Company

Station Personnel

E. Sweeney, Jr. - Manager, Surry Power Station
*T. L. Baucom - Superintendent, Station Operations
*R. E. Nicholls - Supervisor, Electrical Maintenance
*D. W. Speidell, Jr. - Engineering Supervisor
*T. J. Kenny - Assistant Operating Supervisor
T. M. Panak - Store Room Supervisor
*W. C. Earl - Administrative Assistant
*I. P. Kubler - Electrical Foreman
M. D. Tower - Quality Control Engineer

Corporate Personnel

*R. E. Morton - System Electrical Supervisor
T. Stephenson - Nuclear Applications Engineer

Richardson and Wayland Electrical Contractors

*J. O. Olin - Electrical Foreman
W. E. Beasley - Electrician
E. D. Fitzgerald - Electrician

*Present during management interview.

2. Scope

The scope of this inspection was to review the specifications for the construction of fire stops on electrical cables penetrating compartmental boundaries and to inspect the areas where the stops were located.

3. Surry FSAR and Construction Specifications

Section 8.2 of the Surry FSAR states that cable tray construction shall have approved fire stops in both the horizontal and vertical runs. Facility construction specifications for tray installation do say, that fire stops will be used, however, construction prints do not show the details of the stops utilized. Neither reference specifically addresses the compartment boundary fire stops on electrical cables.

The only documentation that shows the fire stops utilized at Surry is a memorandum containing generalized sketches of the stops to use at Surry and a recommended procedure for installing the stops. These sketches show the details of two types of pressure seals and/or fire stops as described below:

a. Sleeves containing cables - Two notched pennies made of one eighth inch thick "micarta" (or steel) shall be inserted in each sleeve approximately one and one half inches apart. The void between the two pennies will be filled with "Thiokol" potting compound. The void between the outer penny and the "bakelite" bushing will be filled with duct seal (no dimension given). Duct seal will be used to seal around edges of the pennies and cables and penny edges. Two, one eighth inch coatings of "Flamemastic 71A Sprayable" will be placed over the outside surface of the sleeve opening. Two, one eighth inch coats of "Flamemastic 71A Sprayable" will be placed on the inside penny from the other side of the sleeve. On vertical sleeves only one bottom "penny" needs to be used to contain "Thiokol" potting compound and fire retardant need only be applied to one side of the stop.

b. Sleeves containing no cables - These sleeves shall be sealed using solid threaded metal sleeve inserts. Two, one eighth inch coats shall be sprayed on the outer surface of the sleeve inserts.

c. Fire stops for cable trays - This type of stop is utilized for cable trays penetrating fire walls. Asbestos wool insulation is placed in the penetration around the cables and between two, one quarter inch steel plates, one on each side of the wall, bolted to the wall, loosely fit around the cables. Duct seal is packed in and around the cables approximately for two inches inside each steel plate Two, one eighth inch coats of "Flamemastic 71A Sprayable" shall be applied over the duct seal and efforts made to apply the "Flamemastic" in and around the cables within the tray close to the fire stop. The sketch shows a one eighth inch coating of "Flamemastic 71A" spray coating to be applied to both the top and bottom of the cables approximately six feet back from the fire stop on one side.

4. Inspections of Fire Stops

An inspection was conducted to verify that fire stops were constructed as described in paragraph 3 above. Since construction prints did not specify where the stops were to be located, the inspector reviewed all compartmental walls which contained electrical safety related cables penetrating the walls and electrical cables penetrating areas where safety related cables were located. There are two types of penetrations used at Surry. One type utilizes a carbon steel circular sleeve embedded in the concrete with "bakelite" bushings threaded into each end to prevent cutting of the cables. The other type penetration is a rectangular opening in the concrete wall or floor to facilitate penetration of cable trays.

The following variations in the actual construction of fire stops with the design described in paragraph 3 were noted.

a. Relay Room (Surry 1)

(1) There are a number of horizontal sleeve type penetrations from the relay room to the cable vault. These penetrations are packed with duct seal on the relay room side with no fire retardant applied. These penetrations do have "Flamemastic" on cable vault side. Several new cables have been pulled through one penetration, and the penetration has been sealed, however, "Flamemastic" has not been applied. The "Flamemastic" on the cable vault side extends back from the seal approximately fifteen inches.

(2) Examined twenty, 6 inch penetrations from the relay room to the cable tunnel. These penetrations are packed with duct seal on the relay room side with no fire retardant applied on relay room side. These penetrations do have "Flamemastic" on the cables on the cable tunnel side approximately fifteen inches back from the seal.

b. Emergency Switchgear Room (Surry 1)

(1) There are a number of six inch sleeve penetrations from the energency switchgear room to the cable tunnel. Examined approximately one half of these penetrations and they appear to be constructed as described in paragraph 3a. Flamemastic" has been applied four or five inches back on the cables. "Flamemastic" has been applied from the cable tunnel side approximately fifteen inches back on the cables. Two of the penetrations observed appear to have new cables pulled through them. "Flamemastic" has not been reapplied to these cables.

(2) There are six penetrations on the west wall of emergency switchgear room into duct lines. The cables entering these penetrations are packed with duct seal. No "Flamemastic" has been applied.

(3) There are a number of vertical sleeve type penetrations from the emergency switchgear room to the control room. These penetrations contain instrument and control cables to the reactor instrument panel and to the reactor console. These penetrations are packed with duct seal from the bottom and an insulating material, "vermiculite," is applied from the control room side. The floor is fifteen inches thick (concrete) with a nine inch trench in the area of the sleeves. This trench is filled with the insulating material described above.

c. Cable Vault (Surry 1)

(1) Sixteen horizontal trays penetrate the cable vault from the cable tunnel. The fire stops in this area appear to be constructed as described in paragraph 3c, however, "Flamemastic" has only been applied on the cables approximately six inches from the wall instead of six feet as described on the construction sketch.

Four of the trays contain newly pulled cables. Duct seal has been packed around the cables, however, "Flamemastic" has not been applied.

(2) There are a number of horizontal sleeve type penetrations from the cable vault to the safeguards building. The cables are sprayed with "Flamemastic" from the cable vault side. Duct seal has been applied from the safeguards building side, however, "Flamemastic" has not been applied from the safeguards building side of the wall.

One penetration to the safeguards building contains new cables. Duct seal has been applied around the cables, however, a fire retardant has not been applied.

(3) There is one wall penetration of the type described in paragraph 3c from the cable vault to the auxiliary building. Fire retardant has been applied from the cable vault side, however, it has only been applied about six inches on the cables. "Flamemastic" has not been applied from the auxiliary building side.

Several new cables have been pulled through the penetrations described above. Duct seal has been applied, however, fire retardant has not been applied.

(4) There are a number of horizontal sleeve penetrations from the cable vault to the auxiliary building. These cables are coated with "Flamemastic" for about 15 inches from the seal on the cable vault side. They are sealed with duct seal from the auxiliary building side. "Flamemastic" has been applied from the auxiliary building side.

d. Cable Spreading Room Above Control Room (Surry 1)

(1) There are approximately fifteen vertical cable penetrations of the type described in paragraph 3c from the cable tunnel to the cable spreading room. "Flamemastic" has been applied to the penetration on the spreading room side and up on cables about 2 inches. The electrical maintenance personnel indicate that below the "Flamemastic" is asbestos wool and duct seal.

One new cable has been installed through one of the penetrations, however, no fire retardant has been applied.

(2) Cables through the ceiling penetrations from the cable spreading room to the main switchgear room have duct seal packed around the cables from the cable spreading room side. No fire retardant has been applied. The penetrations enter the high voltage switchgear cubicles in the main switchgear room. The high voltage switchgear cubicles were not opened, therefore, the inspector did not observe the tops of the penetrations.

e. Main Switchgear Room (Surry 1 and 2)

The main commercial power feeders enter this area from the turbine area. These penetrations are provided with the type of penetration described in paragraph 3c. "Flamemastic" has been applied on the cables approximately one foot from the penetrations.

f. Emergency Power Cables (Surry 1 and 2)

(1) There are a number of horizontal sleeve type penetrations from the emergency switchgear room and relay to the cable tunnel. These penetrations have duct seal packed around cables

from the relay room and emergency switchgear room side. No "Flamemastic" had been applied from emergency switchgear room or relay room side. Cables on the cable tunnel side are sprayed with "Flamemastic" back about fifteen inches from the seal.

Although all penetrations were not observed from cable tunnel side, at least one of the penetrations had new cable pulled through it and "Flamemastic" had not been reapplied.

(2) There are a number of horizontal sleeve penetrations from the east wall emergency switchgear room to the equipment room. These penetrations are packed with duct seal on both sides of wall. No "Flamemastic" has been applied.

(3) There is one horizontal cable tray penetration of the type described in paragraph 3c from Unit No. 1 emergency switchgear room to Unit No. 2 emergency switchgear room. The "Flamemastic" has been applied on the cables approximately six inches back from the penetration.

(4) There are a number of vertical sleeve penetrations from the emergency switchgear room to the control room. These penetrations are sealed with duct seal from the bottom and an insulating material from the top as described in paragraph 4b(3) for Unit No. 1.

h. Cable Vault (Surry 2)

(1) There are sixteen horizontal tray penetrations from the cable tunnel and these appear to be constructed as described in paragraph 3c of this report. The "Flamemastic" is applied on the cables about six inches from the seal.

(2) The penetrations from the cable vault into the auxiliary building are the same as described for Unit No. 1 in paragraph 4c(3) and 4c(4). It was apparent that several penetrations were being repaired during the inspection.

(3) The penetrations from the cable vault into the safeguards building are the same as described for Unit No. 1 in paragraph 4c(2).

i. Cable Spreading Room (Surry 2)

(1) There are approximately fifteen vertical penetrations from the cable tunnel to the cable spreading room. These penetrations are packed with duct seal from the top. No "Flamemastic" has

been applied. Discussions with the electrical foreman indicate that these penetrations are packed with asbestos wool below the duct seal. It was difficult to observe these penetrations from the bottom side because of inaccessibility.

(2). There are a number of vertical sleeve penetrations from the cable spreading room to the main switchgear room. These penetrations are coated with "Flamemastic" back about five inches on the cables. Several new cables have been pulled through two penetrations and the cables packed with duct seal. "Flamemastic" has not been reapplied on these cables.

(3) Cables through the floor vertical sleeve penetrations to the control room are the same as described for Unit No. 1 in paragraph 4d(3).

5. Modifications (Surry 1 and 2)

A number of modifications have been made involving pulling of new cables through fire walls between the control room, emergency switchgear room, cable tunnel, cable vault, auxiliary building, safeguards building, and the cable spreading room above the control room. Some of these modifications are as follows:

a. Addition of cross-tie lines and associated motor operated valves between Units 1 and 2 to provide an additional suction line for each safety injection system.

b. Addition of cross-tie lines and associated motor operated valves between Units 1 and 2 auxiliary feedwater systems to provide an additional steam generator water source.

c. Addition of two booster pumps and piping between the underground condensate tank and the suction side of the auxiliary feedwater pumps for each unit to provide an additional water supply to the auxiliary feedwater systems.

d. Addition of orifices in each steam generator blowdown line to provide a signal for closing the blowdown trip valves on high flow conditions.

e. Relocation of the solenoids which operate the main steam trip valves to an area which is not subject to steam atmosphere.

f. Interlocking of accumulator valves. (Surry 1)

g. Interlocking of Residual Heat Removal System valves.

The corrective maintenance procedures for replacement of safety related high voltage power cables and for replacement of safety related low voltage control cables were reviewed for the above modifications and no provisions were incorporated in the procedures for the breaching of compartmental fire stops or repair of the fire stops to insure that integrity of the stops are maintained. For instance, the above described modifications involved pulling approximately 120 new cables. Approximately one half of these cables were pulled through fire stops. Cable pulling procedures do not include provisions for quality control inspections to insure that proper materials are used and to insure that repair is made as designated by the procedure. VEPCO representatives stated that the cable pulling procedures will be revised to include instructions for repairing the fire stops and inspecting them during and subsequent to repair.

6. Fire Stop Construction (Surry 1 and 2)

The fire stops were originally installed on the cable penetrations by Stone and Webster Engineering Corporation. Most of the cables involved with modifications were pulled by Richardson and Wayland Electrical Contractors. The work was accomplished by use of a VEPCO approved maintenance procedure and the cable routings were approved by the VEPCO electrical maintenance supervisor. Although cables were pulled by electrical contractors, they were under direct control of VEPCO site management.

a. Fire Stop Materials

Originally the fire stops were constructed of asbestos wool, duct seal, "Thiokol" potting compound, "micarta" pennies, "vermiculite" insulating material, steel sheets, and "Flamemastic 71A" fireproofing material. The purchase of these materials was handled by the contractor who procured them from electrical suppliers. Purchase orders and material specifications were unavailable except for a technical bulletin which describes the fire retardant characteristics of "Flamemastic 71A" and acceptable methods of applying the "Flamemastic."

(1) "Flamemastic 71A" is produced by Dnya-Therm Corporation and the fire resistance characteristics are described on Dyna-Therm Technical Bulletin 01079, Issue 2. The bulletin specifies no burn-through of one sixteenth of an inch coating after fifteen minute exposure to a propane torch, flame temperature, 2050°F with the distance from the torch of two inches. The chemical composition or the fire retardant characteristics of the material was not available.

(2) "Thiokol" potting compound - No information was available on the chemical composition or fire retardant characteristics of this material. VEPCO is currently using a comparable material, "PRC" potting compound. The documentation was not available on the chemical composition or fire characteristics of this material. This material is being used as a sealant and is type PR-1201-Q produced by Product Research Corporation.

(3) Duct seal - Procurement documentation was not available. A product known as "Dux seal" Type NSG, produced by Johns Manville Corporation is currently being used at Surry. The fire retardant characteristics were not available, however, it is being used as a sealant.

(4) "Micarta" board was used in the sleeve type penetrations to contain the potting compound. "Micarta" is a hard fiber like material. Documentation on the chemical composition or fire retardant characteristics of this material was not available.

(5) Asbestos wool is an insulating material. Documentation on the chemical composition or fire retardant characteristics of this material was not available.

(6) "Virmiculite" is an insulating material. Documentation on the chemical composition or fire retardant characteristics of this material was not available. Sample of material would not burn when a torch was applied for a short period of time.

7. Licensee Action

a. Licensee representatives stated that plans are underway to test the types of fire stops used at Surry to insure that they will effectively stop a fire.

b. Original material and inspection records will be obtained to verify original construction. If these records are not available, tests will be conducted on samples of installed materials to qualify the materials to above described tests.

c. Station cable pulling procedures will be updated to include fire stop repair and inspection.

d. Inspection of the fire stops will be completed and a repair program established to upgrade them to the standards qualified in the above described tests..

e. The reviews required by IE Bulletins 75-04 and 75-04A are detailed in paragraph 8 of this report.

8. Status of IE Bulletins 75-04 and 75-04A

The initial response to IEB's 75-04 and 75-4A was contained in VEPCO letter dated April 22, 1975. This letter establishes the schedule for completion of the reviews specified in the bulletin. The response schedules the completion of the review of item No.2 of Bulletin 75-04 by May 23, 1975, and completion of the remaining reviews on Bulletin 75-04 and 75-04A by June 2, 1975.

An engineer has been assigned from the corporate office to coordinate the response. Discussions with this coordinator indicate that approximately ten percent of the reviews have been accomplished as of April 30, 1975. The work that has been accomplished is on item No. 2 of Bulletin 75-04. No work had yet progressed on the remainder of the items.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
230 PEACHTREE STREET, N. W. SUITE 818
ATLANTA, GEORGIA 30303

IE Inspection Report No. 50-259/75-11

Licensee: Tennessee Valley Authority
818 Power Building
Chattanooga, Tennessee 37401

Facility Name: Browns Ferry Unit 1
Docket No.: 50-259
License No.: DPR-33
Category: B2

Location: Decatur, Alabama

Type of License: G-E, 1098 Mwe, BWR

Type of Inspection: Announced, Restoration of Fire Damaged Area

Dates of Inspection: July 23-25, 1975
July 30-August 1, 1975
August 6-8, 1975
August 13-15, 1975
August 20-22, 1975
August 27-29, 1975

Dates of Previous Inspection: July 1-3, 1975
July 8-10, 1975
July 15-17, 1975

Principal Inspector: B. J. Cochran, Reactor Inspector
Facilities Section
Facilities Construction Branch

Accompanying Inspector: T. D. Gibbons, Reactor Inspector
Engineering Section
Facilities Construction Branch

Other Accompanying Personnel: None

Principal Inspector: B. J. Cochran 9/12/75
B. J. Cochran, Reactor Inspector Date
Facilities Section
Facilities Construction Branch

Reviewed by: [illegible] [illegible]
J. C. Bryant, Senior Inspector Date
Facilities Section
Facilities Construction Branch

AMERICAN REVOLUTION BICENTENNIAL 1776-1976

SUMMARY OF FINDINGS

I. Enforcement Items

None

II. Licensee Action on Previously Identified Enforcement Matters

None

III. New Unresolved Items

None

IV. Status of Previously Reported Unresolved Items

None

V. Design Changes

None

VI. Unusual Occurrences

None

VII. Other Significant Findings

None

VIII. Management Interview

The inspectors were in continuous communications with the licensee throughout the inspection.

DETAILS I

Prepared by: _____ 9/11/75
B. J. Cochran, Reactor Inspector Date
for Facilities Section
Facilities Construction Branch

_____ 9/11/75
T. D. Gibbons, Reactor Inspector Date
Engineering Section
Facilities Construction Branch

Dates of Inspection: July 23-25, 1975
July 30-August 1, 1975
August 6-8, 1975
August 13-15, 1975
August 20-22, 1975
August 27-29, 1975

Reviewed by: _____ 9/11/75
J. C. Bryant, Senior Inspector Date
for Facilities Section
Facilities Construction Branch

1. Persons Contacted

Tennessee Valley Authority

H. J. Green - Plant Superintendent
J. F. Groves - Assistant Plant Superintendent
J. G. Dewease - QA Supervisor (DPP)
A. W. Crevasse - QA Manager (OPQA)
J. R. Hilding - Site QA Manager (OPQA)
S. P. West - Quality Engineering Support (OPQA)
D. P. McCloud - QA Audit Supervisor (OPQA)
B. A. Gant - Assistant Construction Engineer (DEC)
T. G. Campbell - Electrial Supervisor (DEC)
A. Gooch - QA Records Clerk (OPQA)

2. General Status of Restoration Activities

a. The damaged cables, conduit, trays, hangers and supports have been identified, tagged, removed from the fire area, and placed in storage.

b. Twelve concrete core samples were removed from the fire area at selected locations in the Unit 1 containment building and analyzed for deterioration due to chlorides released during the fire. Sections of embedded rebar were also removed for analysis.

The licensee reported that the analysis results indicated that there was no apparent deterioration in the concrete or rebar as a result of chlorides.

c. Unit 1 torus was inspected for movement during the reactor depressurization. No movement of the torus was detectable.

d. Crews of electrcians and QC inspectors are assigned to two 12-hour shifts to identify damaged cables in the cable spreading room and reactor building.

The licensee will remove all damaged safety related cables and pull new cables. Splicing will be done on non-safety related control, signal and power cables.

e. QA records of restoration activities performed prior to the removal of fire damaged cables, conduit and trays, are being assembled, cataloged, and processed.

f. The licensee has issued work plans for removal of spalled concrete and repair of damaged concrete and embedments in accordance with approved procedures.

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U. S. NUCLEAR REGULATORY COMMISSION

OFFICE OF INSPECTION AND ENFORCEMENT

REGION I

IE Inspection Report No: 50-03/75-02

Docket No: 50-03

Licensee: Consolidated Edison Company of New York

License No: DPR-5

4 Irving Place

Priority: -

New York, New York 10003

Category: C

Safeguards Group: -

Location: Indian Point 1, Buchanan, New York

Type of Licensee: PWR B&W (615 MWe)

Type of Inspection: Special, Announced

Dates of Inspection: 4/29, 30 - 5/1, 2/75

Dates of Previous Inspection: 2/27-28/75

Reporting Inspector: [signature] (for) 5-22-75
G. Napuda DATE

Accompanying Inspectors: None DATE

DATE

DATE

Other Accompanying Personnel: None DATE

Reviewed By: [signature] (for) 5-22-75
R. C. Haynes, Senior Reactor Inspector DATE

SUMMARY OF FINDINGS

Enforcement Action

A. Items of Noncompliance

None

B. Deviations

None

Licensee Action on Previously Identified Enforcement Items

Not Applicable

Design Changes

None Identified

Unusual Occurrences

None Identified

Other Significant Findings

A. Current Findings

1. Acceptable Findings

a. Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals

A visual examination of the fire barriers and compartment seal installations and fire retardant coating applications was performed by the inspector. There is correlation between the as-built status and the documented requirements. (Details, Paragraph 3)

b. Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

An examination was made of the maintenance and modification procedures for the installation of fire barriers and com-

partment boundary seals, and the application of fire-retardant coating, for safety-related cables.

Present procedures appear to control maintenance and modifications to fire barriers. (Details, Paragraph 4)

B. Status of Previously Reported Unresolved Items

Not Inspected

Management Interview

At the conclusion of the inspection, the inspector held a meeting at the site with the following personnel to discuss the inspection findings:

Consolidated Edison Company

Mr. M. B. Byster, QA Engineer
Mr. P. M. Duggan, Electrical Engineer
Mr. J. M. Makepeace, Technical Operations Director
Mr. S. G. Salay, Station Manager
Mr. R. A. Saya, Division Engineer

The following items were discussed and the inspector's findings were acknowledged by the licensee.

A. Purpose of Inspection

The inspector stated that the purpose of this special, announced inspection was to examine the documented facility requirements for fire stops on safety-related cables and penetration seals, to visually inspect these items for conformance with the requirements, to examine the licensee's provisions for invoking the requirements during maintenance and modification work and to determine the status of the licensee's efforts with respect to the actions listed in IE Bulletins 75-04 and 75-04A.

B. Current Findings: Acceptable Area

The inspector stated that his review of the following areas revealed acceptable findings:

1. Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals

A visual examination was performed of the installation of fire barriers and compartment boundary seals, and the application of fire retardant coating for safety-related cables. There is

correlation between this construction and the facility's documented requirements. (Details, Paragraph 3)

2. Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

An examination was made of the maintenance and modification procedures for the installation of fire barriers and compartment seals, and the application of fire-retardant coating, for safety-related cables. There is correlation between these procedures and the facility's documented requirements. (Details, Paragraph 4)

C. Status of Licensee's Efforts re IE Bulletins 75-04 and 75-04A

The licensee provided the inspector with a status report on his efforts in complying with the requirements of IE Bulletins Nos. 75-04 and 75-04A. (Details, Paragraph 5)

DETAILS

1. Persons Contacted

Consolidated Edison Company

Mr. M. B. Byster, QA Engineer
Mr. P. M. Duggan, Electrical Engineer
Mr. J. M. Makepeace, Technical Operations Director
Mr. R. A. Saya, Division Engineer

2. General

a. Plant Status

The plant is presently in an extended shut down status.

b. Purpose of Inspection

The purpose of this inspection was to examine the documented facility requirements for fire stops on safety-related cables and penetration seals, to visually inspect these items for conformance with the requirements, to examine the licensee's provisions for invoking the requirements during maintenance and modification work and to determine the status of the licensee's efforts with respect to the actions listed in IE Bulletins 75-04 and 75-04A.

3. Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals

a. Requirements

The inspector found no applicable requirements for fire barriers and penetration seals in the Final Hazards Summary Report. He requested all site documentation related to the installation of fire barriers and penetration seals. Specifications EI-5045, Revision 3, -59- 1028, and -59- 1029 were provided the inspector for his review. Fire barriers were not addressed in these specifications. No construction and installation specifications for the cable ducts were available.

The licensee had identified all penetrations and electrical equipment on prints 138002-1, 138003-1, 138384-16, 138732-10, 138733-6, 138734-28/29, 140937-3, 141176-6, and 141536-4 and these were reviewed and utilized by the inspector for his Observations.

b. Observations

(1) Nuclear Service Building

All cables were contained within heavy gauge metal ducts; where these ducts penetrated walls or floors, there was a duct-to-concrete seal that appeared to be mortar.

Cables entering equipment were channeled through either metal troughs or conduits. All floor-entry conduits and troughs had fiberglass packing at the upper end. Fiberglass had also been packed into the upper end of troughs that entered cubicles through the top of the cubicle. Extensive use of asbestos wrapping within the cubicles was noted.

(2) Superheater Building

All duct penetrations had concrete-to-duct mortar seals. Approximately 80% of the conduit penetrations had concrete-to-conduit mortar seals. Nine of the unsealed conduits passed through two floor sleeves into the control room at the west wall. Thirteen other conduits passed through a fiberglass-packed rectangular penetration in the control tunnel east wall. The other unsealed penetrations contained single conduits.

All control-room-equipment penetrations were through the floors of the cubicles. These penetrations were packed with fiberglass or covered with a marinite board and had Flamemastic applied from both sides.

Elsewhere in the building, cubicle-floor-entry conduits were packed with fiberglass and sufficient evidence was available to determine that troughs entering cubicle tops were fiberglass packed.

Extensive asbestos wrapping of cables and the installation of smoke detectors within virtually all cubicles was noted.

(3) Diesel Generator Room

Conduits are used exclusively within this room. The penetrations to the electrical tunnel do not have (nor are required to have) fiberglass packing or sealing.

(4) Electrical Tunnel

All cables are contained within enclosed heavy-gage metal ducts. Where these ducts penetrate walls, there is a concrete-to-duct seal. The exception is the cable that enters the Diesel Room, which is enclosed in conduit.

In addition to a water-deluge system, this area is provided with ionization and smoke-detector systems.

(5) General

Extensive use of asbestos wrapping on cables within cubicles was noted.

The licensee stated that in excess of 80% of the facility's cables were lead-wrapped and all cable insulation was fire-retardant.

In the areas examined, the inspector noted that all non-safety-related cables were protected with fire barriers in a fashion similar to that utilized for safety-related cables.

4. Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

The inspector reviewed Station Administrative Order No. 104-"Maintenance Work Request (MWR) Procedure," and No. 127-"Modifications to Indian Point Facilities." They require work instructions and provide control for maintenance and modification activities.

Urethane, originally used to seal the floor pentrations in the Control Room, was removed during the period of time when the unit #2 floor penetrations were being sealed. The licensee stated that the penetrations were resealed to Unit #2 specifications. This modification occurred prior to the preparation of the above-referenced procedures. The activity was controlled under a maintenance work request procedure and documented on MWR#5N0485. The licensee stated construction specifications and prints were utilized as work instructions.

5. Status of Licensee's Efforts re IE Bulletins 75-04 and 75-04A

The inspector requested a status report from the licensee regarding IE Bulletins 75-04 and 75-04A. The licensee provided the inspector with a copy of an April 23, 1975 letter from William J. Cahill, Jr. (Consolidated Edison Company) to J. P. O'Reilly (U.S.N.R.C.), which indicates that their efforts are expected to be completed by 6/1/75.

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U. S. NUCLEAR REGULATORY COMMISSION

OFFICE OF INSPECTION AND ENFORCEMENT

REGION I

IE Inspection Report No: 50-213/75-04

Docket No: 50-213

Licensee: Connecticut Yankee Atomic Power Co.
P.O. Box 270
Hartford, Connecticut

License No: DPR-61

Priority:

Category: C

Safeguards Group:

Location: Middletown, Connecticut

Type of Licensee: PWR 575 MWE (W)

Type of Inspection: Special, Announced

Dates of Inspection: May 6-7, 1975

Dates of Previous Inspection: 3/11/75 - 3/14/75

Reporting Inspector: [signature] (for) — 5-20-75
Jacque Durr, Reactor Inspector — DATE

Accompanying Inspectors: None — DATE

DATE

DATE

Other Accompanying Personnel: None — DATE

Reviewed By: [signature] (for) — 5-20-75
R. C. Haynes, Senior Reactor Inspector — DATE

SUMMARY OF FINDINGS

Enforcement Action

A. Items of Noncompliance

None

B. Deviations

None

Licensee's Action on Previously Identified Enforcement Items

Not applicable

Design Changes

None identified

Unusual Occurrences

None identified

Other Significant Findings

A. Current Findings

1. Acceptable Areas

a. Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals

A visual examination was performed of the installation of fire barriers and compartment boundary seals, and the application of fire-retardant coating, for safety related cables. There is correlation between this construction and the facility's documented requirements. (Details, Paragraph 3.b.)

b. Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

Flame barriers were not addressed in maintenance procedures, but more recent modification procedures do specify flame barriers. (Details, Paragraph 4).

2. Unresolved Items

None identified

B. Status of Previously Reported Unresolved Items

Not inspected

Management Interview

The inspector held a meeting at the site at the conclusion of the inspection to discuss the inspection findings.

a. Persons Present

Connecticut Yankee Atomic Power Company

W. Hartley, Plant Superintendent
J. Ferguson, Staff Engineer
J. Summa, Associate Engineer, Controls and Instrumentation

b. Items Discussed

The following items were discussed and the inspector's findings were acknowledged by the licensee.

(1) The Purpose of the Inspection

The inspector stated the purpose of the inspection. (Details, Paragraph 2.b.)

(2) Correlation Betwen the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety Related Cables and Penetration Seals

The inspector performed a visual examination of the safety related cabling boundary seals and compared them to the facility requirements and found that they conform. (Details, Paragraph 3.b.)

(3) Invokement of Facility Requirements for Fire Stops and Electrical Safety Related Cables and Penetrations in Maintenance and Modification Procedues

The inspector stated that flame barriers were not addressed in maintenance procedures but that more recent modification procedures do specify flame barriers. (Details, Paragrah 4.)

DETAILS

1. Persons Contacted

Connecticut Yankee Atomic Power Company

W. Hartley, Plant Superintendent
B. Traggio, Senior Staff Engineer
J. Ferguson, Staff Engineer
G. Bouchard, Maintenance Foreman
J. Summa, Associated Engineer, Controls and Instrumentation

2. General

a. Plant Status

The plant was in power operation during the inspection.

b. Purpose of Inspection

The purpose of this inspection was to examine the documented facility requirements for fire stops on safety-related cables and penetration seals, to visually inspect these items for conformance with the requirements, to examine the licensee's provisions for invoking the requirements during maintenance and modification work and to determine the status of the licensee's efforts with respect to the actions listed in IE Bulletins 75-04 and 75-04A.

3. Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals

a. Requirements

(1) The inspector read a letter from the original Architect/Engineer, Stone and Webster, dated April 30, 1975, stating there were no construction specifications prepared for the Connecticuit Yankee plant.

(2) The only specific reference to cable penetrations to be found was on a Stone and Webster drawing number 10899-FE-38A, Note 2, which stated the following:

"Upon completion of cable installation through floor sleeves, fill voids with a sealing compound to a depth of not less than two inches, spares to be plugged."

This applies only to the control console penetrations. There is a detail drawing of a typical penetration consisting of a conduit sleeve with coupling nuts on each end. The assembly is placed with the long axis vertical through the concrete floor.

(3) Cable flame barriers are not addressed in the FSAR.

(4) There are no requirements for fire retardant coatings.

b. Observations

The following areas were inspected and the results are as indicated:

(1) Control Room

The cables pass through conduit sleeves in the floor of the main control console as described in 3.a. above. The older penetrations were packed with an asbestos fiber material and a binding agent. The more recent sealings had been made with a flamemastic putty. All penetrations in the console were sealed as per drawing 10899-FE-38A.

(2) Switch Gear Room

This room is located below the control room. Most cables from the control console pass directly into this room except for a few which pentrate outside the room and are brought through the wall in 9 cable trays. Where these cable trays pass through the wall there are no flame barriers.

The east wall has seven vertical cable trays penetrating the floor with no flame barriers.

The cable trays have metal covers installed over their full lengths. This is typical throughout the plant except in several areas where maintenance is in progress.

(3) Screen House

All cabling in the screen house is in conduit. The motor control centers have large openings through the bottoms to allow entrance of the conduit. These openings are not sealed.

(4) Emergency Diesel Generators A and B

All cable penetrations in to the Emergency Diesel Generator rooms are through the walls. The 4160 volt power cables are all in conduit, while the control cabling transits the wall in conduit sleeves and into cable trays.

(5) Cable Tray Area

This area is located below the switch gear room and is approxiamtely 60 ft. by 100 ft. This area is criss-crossed with cable trays and conduits. The cables drop through the switch gear room floor in conduit sleeves. Not all of the penetrations were accessible but it was noted that approximately 75% of those observed were packed with a Flamemastic type compound. The remaining 25% were also in conduit sleeves but without the packing.

(6) Waste Gas/Liquid Building

This is a recently costructed modification (Reference Details, Paragraph 4). The cable penetrations that pass through the walls were of two types, (a) solid conduit, (b) conduit sleeves packed with Flamemastic.

(7) Primary Auxilary Building

Certain areas of this building were inaccessible due to radiation. There are cable trays with covers and where the cabling leaves the trays it transitions to conduit. The High and Low Pressure Safety Injection pump cables are both made in conduit runs. The Residual Heat Removal pumps have cable tray runs to a wall which then transfer to conduit for a vertical run to the motor.

(8) Cable Vault

This is adjacent to the Primary containment and is the penetration point for cabling into containment. There are five undergound conduit groups that enter the vault and transfer to cable trays with covers. The vault has a carbon dioxide fire suppression system.

(9) Smoke Detection System

Area smoke detectors were observed in the following areas: Switchgear room, cable tray area, cable vault and emergency Diesel room.

(10) Accident Prevention Manual

The plant has a "Accident Prevention Manual" which outlines the common fire safety recommendations to the employees. The control of welding and firewatches is addressed in detail in the plant Station Order S-A-3, dated 2/12/74 and S-M-212.

4. Invokement of Facility Requirements for Fire Stops on Electrical Safety Related Cables and Penetrations in Maintenance and Modification Procedures

Flame barriers are not addressed in maintenance procedures but the last major modification procedure, Waste Handling System Modification, J. O. 11726.19, does specify flame barriers through walls and floors for cable and tray penetrations. The cabling used was specified to be fire resistant.

5. Status of Licensee's Efforts re IE Bulletins 75-04 and 75-04A

The licensee stated that there was no additional information, concerning the referenced Bulletins 75-04 and 75-04A, available at this time except that presented in the letter response, dated April 23, 1975.

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U. S. NUCLEAR REGULATORY COMMISSION

OFFICE OF INSPECTION AND ENFORCEMENT

REGION I

IE Inspection Report No: 50-317/75-11

Docket No: 50-317

Licensee: Baltimore Gas and Electric Company
Gas and Electric Building
Baltimore, Maryland 21203

License No: DPR-53

Priority:

Category: B-2

Safeguards Group:

Location: Lusby, Maryland (Calvert Cliffs)

Type of Licensee: PWR 845 MWe (CE)

Type of Inspection: Special, Announced

Dates of Inspection: May 5-10, 1975

Dates of Previous Inspection: April 14-16, 1975

Reporting Inspector: P. J. Kellogg, Reactor Inspector — 5/16/75 DATE

Accompanying Inspectors: _____ DATE

_____ DATE

_____ DATE

Other Accompanying Personnel: _____ DATE

Reviewed By: W. Axe (for) R. C. Haynes, Senior Reactor Inspector — 5-19-75 DATE

SUMMARY OF FINDINGS

Enforcement Action

A. Items of Noncompliance

None

B. Deviations

None

Licensee Action on Previously Identified Enforcement Items

Not Applicable

Design Changes

None identified

Unusual Occurrences

None Identified

Other Significant Findings

A. Current Findings

1. Acceptable Areas

a. Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals

A visual examination was performed of the installation of fire barriers and compartment boundary seals, and the application of fire-retardant coating, for safety-related cables. There is correlation between this construction and the facility's documented requirements in certain areas. (Details, paragraph 3)

b. Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

An examination was made of the maintenance and modification procedures for the installation of fire barriers

and compartment boundary seals, and the application of fire-retardant coating, for safety-related cables. There is correlation between these procedures and the facility's documented requirements. (Details, Paragraph 4)

2. Unresolved Items

a. Cable pull ropes. (Details, Paragraph 5.a)

b. Shrinkage/settling of Flamemastic 71A. (Details, Paragraph 5.b)

B. Status of Previously Reported Unresolved Items

Not inspected

Management Interview

At the conclusion of the inspection, the inspector held a meeting at the site with the following personnel to discuss the inspection findings:

Baltimore Gas and Electric Company

Mr. M. Bowman, QA Engineer-Operations
Mr. R. Douglass, Chief Engineer
Mr. W. Gibson, Supervisor, Operations QA
Mr. J. Hoppa, Construction QA
Mr. W. Lippold, Nuclear Engineer
Mr. L. Russel, Nuclear Plant Engineer-Operations

The following items were discussed, and the inspector's findings were acknowledged by the licensee:

A. Purpose of Inspection

The inspector stated that the purpose of this special, announced inspection was to examine the documented facility requirements for fire stops on safety-related cables and penetration seals, to visually inspect these items for conformance with the requirements, to examine the licensee's provisions for invoking the requirements during maintenance and modifications work and to determine the status of the licensee's efforts with respect to the actions listed in IE Bulletins 75-04 and 75-04A.

B. Current Findings: Acceptable Areas

The inspector stated that his review of the following areas revealed acceptable findings:

1. Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals

   A visual examination was performed of the installation of fire barriers and compartment boundary seals, and the application of fire-retardant coating, for safety-related cables. There is correlation between this construction and the facility's documented requirements in certain areas. (Details, Paragraph 3)

2. Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

   An examination was made of the maintenance and modification procedures for the installation of fire barriers and compartment boundary seals, and the application of fire-retardant coating, for safety-related cables. There is correlation between these procedures and the facility's documented requirements. (Details, Paragraph 4)

C. Unresolved Items

The inspector stated that the following items were observed and are considered to be unresolved:

1. Cable pull ropes. (Details, Paragraph 5a)

2. Shrinkage/settling of Flamemastic 71A. (Details, Paragraph 5.b)

D. Status of Licensee's Efforts re IE Bulletins 75-04 and 75-04A

The licensee provided the inspector with a status report on his efforts in complying with the requirements of IE Bulletins Nos. 75-04 and 75-04A. (Details, Paragraph 6)

DETAILS

1. Persons Contacted

Baltimore Gas and Electric Company

Mr. J. Basile, Nuclear Plant Engineer-Maintenance
Mr. R. Douglass, Chief Engineer
Mr. G. Hinton, Construction QA
Mr. J. Hoppa, Construction QA
Mr. P. Rizzo, Foreman I&C

2. General

a. Plant Status

The plant was operating at 100% power. Portions of the Escalation to Power Test Program were being performed during the inspection..

b. Purpose of Inspection

The purpose of this inspection was to examine the documented facility requirements for fire stops on safety-related cables and penetration seals, to visually inspect these items for conformance with the requirements, to examine the licensee's provisions for invoking the requirements during maintenance and modification work and to determine the status of the licensee's efforts with respect to the actions listed in IE Bulletins 75-04 and 75-04A.

3. Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals

a. Requirements (per the Architect-Engineer's specification, 6750-E-406, Rev. No. 6)

(1) Floors and Walls

Fire Stops on cable trays through electrical blockouts in the floors and walls consist of grouting in position after cables and covers are installed. The area around the cables is then sealed with approximately 3 inches of

Kaowool and a 3/8 inch coat of Flamemastic 71A on each end of the penetration. On floor penetrations, Vermiculite or Pearlite is added to fill the area between the end seals.

Conduits are sealed by grouting in place after installation. Spare conduits are plugged on both ends.

(2) Floor of the Control Room

Wireways and conduits passing through the control room floor are sealed by cutting a piece of 1/2 inch Marinite 36A to fit around the wireways and conduits. The Marinite is then attached to the underside of the floor and covered with 3/8 inch layer of Flamemastic 71A. The blockout is then filled with Vermiculite. The upper surface is then sealed with a 1/2" piece of Marinite 36A and covered with 3/8 inch of Flamemastic 71A.

The ends of the wireways and conduits in the control room are filled with 1/4 inch of Flamemastic 71A.

b. Observations

All electrical blockouts, with the exception of the Let Down Heat Exchanger Room, due to high radiation levels, were inspected for compliance with the facility's requirements. All fire stops and seals were in compliance with the facility's requirements with the exception of those listed below:

(1) Component Cooling Heat Exchanger Room, 5 feet elevation cable tray - ZB1AA6: no Flamemastic on one end, A1AA33: upper 3 inches of grout missing.

(2) Passageway outside elevator, 5 feet elevation, cable tray A1AB01: hole through Flamemastic and Kaowool on one end.

(3) East Piping Penetration Room, 5 feet elevation; cable tray ZB1AC02: no Flamemastic or Kaowool on one end.

(4) 4160 Switchgear Room, 27 feet elevation, cable tray A1AB80: small hole through Flamemastic.

(5) Cable Spreading Room, 27 feet elevation: one 4 inch conduit not plugged on lower end.

(6) Computer Room, 45 feet elevation: conduits under false floor not sealed with Flamemastic.

(7) West wall of Turbine Building, 36 feet elevation: cable trays AITB93, AITB94: no Flamemastic on bottom of trays around cables, insufficient grouting around trays or evidenced by air flow being present.

The licensee corrected the above items during this inspection.

4. Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

The licensee currently subcontracts all maintenance and modifications to electrical cables and penetration seals for Units 1 and 2 to the Architect-Engineer. The modifications are then completed in accordance with the requirements of the A-E's specification (6750-E-406 Revision 6). The modifications were inspected to verify the fire stops and penetration seals were installed in accordance with these specifications. No descrepancies were noted.

The licensee is writing a maintenance procedure to be utilized in modifications involving removal and replacement of fire stops and penetration seals which will include the requirements of the A-E specifications and provisions of ANSI 45.2.4. This procedure will be utilized when the licensee takes over maintenance in this area.

5. Unresolved Items

a. Cable pull ropes

During this inspection it was noted that many fire stops had cable pull ropes (hemp) passing through the fire stops. The presence of these ropes was not noted in the specifications and the licensee was asked to evaluate their presence and its effect upon the function of the fire stop.

The licensee, at the exit meeting, indicated the cable pull ropes would be removed and the fire stops repaired; or, where it was desirable to have the ropes left in place, they would be cut back close to the fire stop and their ends would be covered with Flamemastic 71A.

This item is considered to be unresolved pending completion of corrective action by the licensee and subsequent review by an NRC inspector.

b. Shrinkage/settling of Flamemastic 71A

During this inspection it was noted that the Flamemastic 71A had pulled away from many tray covers, leaving a space of about 1/4 inch across the top of the stop. This space was apparently formed by the Flamemastic 71A settling or shrinking during the drying process.

The licensee was asked to evaluate the presence of this space on the effectiveness of the fire stop and to take appropriate action based upon this evaluation.

This item is unresolved pending completion of the licensee's evaluation and possible corrective actions, and their subsequent review by an NRC inspector.

6. Status of Licensee's Efforts re IE Bulletins 75-04 and 75-04A

a. The licensee's response to IE Bulletin 75-04 indicated that no corrective actions were necessary.

b. The licensee's response to IE Bulletin 75-04A indicated that a review of items 2, 3, and 4 was in progress and would be completed by 23 May 1975. During this inspection it was ascertained that an administrative notice was being prepared and existed in rough draft which will address items 3a through d, and f. The licensee indicated the installed communication equipment was satisfactory with respect to item 3e. The licensee indicated that their policy with respect to item 2 would not require any change, but would require some formalization. Initial review of emergency procedures with respect to item 4 has been completed, and final review is in progress.

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U. S. NUCLEAR REGULATORY COMMISSION

OFFICE OF INSPECTION AND ENFORCEMENT

REGION I

IE Inspection Report No: 50-244/75-07

Docket No: 50-244

Licensee: Rochester Gas and Electric Corporation
89 East Avenue
Rochester, New York 14649

License No: DPR-18

Priority:

Category: C

Safeguards Group:

Location: Ontario, New York (Ginna 1)

Type of Licensee: PWR 490 MWe (W)

Type of Inspection: Special, Announced

Dates of Inspection: April 28-May 1, 1975

Dates of Previous Inspection: March 31 to April 2 and April 24-25, 1975

Reporting Inspector: Jacque Durr, Reactor Inspector — May 16, 1975 DATE

Accompanying Inspectors: None — DATE

DATE

DATE

Other Accompanying Personnel: None — DATE

Reviewed By: W. Gage (for) R. C. Haynes, Senior Reactor Inspector — 5/16/75 DATE

SUMMARY OF FINDINGS

Enforcement Action

A. Items of Noncompliance

None

B. Deviations

None

Licensee Action on Previously Identified Enforcement Items

Not applicable

Design Changes

None identified

Unusual Occurrences

None

Other Significant Findings

A. Current Findings

1. Acceptable Areas

Not applicable

2. Unresolved Items

A visual examination was performed of the installation of fire barriers and compartment boundary seals, and the application of fire-retardant coating, for safety-related cables.

a. Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals

The inspector found cabling entering and leaving penetrations in Class I structures without flame barrier material, in apparent contradiction to the FSAR. (Details, Paragraph 3.b(10))

b. Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

The inspector did not find any specific requirements for the maintenance of flame barriers during routine maintenance and no evidence that it is addressed in modification instructions. (Details, Paragraph 4)

B. Status of Previously Reported Unresolved Items

Not inspected.

Management Interview

At the conclusion of the inspection, the inspector held a meeting at the site with the following personnel to discuss the inspection findings.

Rochester Gas and Electric Corporation

Mr. C. Anderson, Quality Assurance Coordinator
Mr. J. Arthur, Chief Engineer
Mr. De Merett, Supervisor, Chemistry and Health Physics
Mr. L. Lang, Assistant Superintendent
Mr. T. Meyer, Cadet Nuclear Engineer
Mr. C. Platt, Superintendent
Mr. B. Snow, Operations Engineer
Mr. E. Smith, Fire Protection Engineer
Mr. R. Smith, Chief Mechanical Engineer
Mr. L. White, Vice President, Electric and Steam Production

The following items were discussed, and the inspector's findings were acknowledged by the licensee.

A. Purpose of Inspection

The inspector stated that the purpose of this special, announced inspection was to examine the documented facility requirements for fire stops on safety-related cables and penetration seals, to visually inspect these items for conformance with the requirements, to examine the licensee's provisions for invoking the requirements during maintenance and modification work and to determine the status of the licensee's efforts with respect to the actions listed in IE Bulletins 75-04 and 75-04A.

B. Unresolved Items

1. Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals

A visual examination was performed of the installation of fire barriers and compartment boundary seals, and the application of fire-retardant coating, for safety-related cables.

The inspector found cabling entering and leaving penetrations in Class I structures without flame barrier material, in apparent contradiction to the FSAR. (Details, Paragraph 3.b.(10))

2. Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

The inspector did not find any specific requirements for the maintenance of flame barriers during routine maintenance and no evidence that it is addressed in modification instructions. (Details, Paragraph 4)

Subsequent Telephone Conversation (May 2, 1975)

Persons Contacted

Rochester Gas and Electric Corporation

Mr. J. Arthur, Chief Engineer
Dr. R. Mecredy, Advisor
Mr. B. Smith, Chief Mechanical Engineer
Mr. L. White, Vice President, Electric and Steam Production

Items Discussed

The inspector inquired of the licensee how he would review the lack of flame barrier material and its apparent conflict with the FSAR. (It poses a possible noncompliance with 10 CFR 50.59 as an unreviewed safety question.)

The licensee stated that he would review all unsealed Class I structure cable penetrations as per 10 CFR 50.59 and disposition each case prior to plant startup by installing flame barrier material or by some alternate method which, after a safety analysis, would show there were no unreviewed safety questions.

DETAILS

1. Persons Contacted

Rochester Gas and Electric Corporation

Mr. C. Anderson, Quality Assurance Coordinator
Mr. J. Arthur, Chief Engineer
Mr. L. Lang, Assistant Superintendent
Mr. T. Meyer, Cadet Nuclear Engineer
Mr. J. Paris, Instrument Repair Foreman
Mr. C. Platt, Plant Superintendent
Mr. J. Scheetz, Manager, Electrical Engineering
Mr. B. Snow, Operations Engineer
Mr. B. Smith, Chief Mechanical Engineer
Mr. E. Smith, Fire Protection Engineer
Mr. L. White, Vice President, Electric and Steam Production

2. General

a. Plant Status

The plant was in a refueling/maintenance shutdown during the inspection.

b. Purpose of Inspection

The purpose of this inspection was to examine the documented facility requirements for fire stops on safety-related cables and penetration seals, to visually inspect these items for conformance with the requirements, to examine the licensee's provisions for invoking the requirements during maintenance and modification work and to determine the status of the licensee's efforts with respect to the actions listed in IE Bulletins 75-04 and 75-04A.

c. Entrance Interview

The inspector held an entrance interview with the following licensee personnel: C. Platt, B. Smith, E. Smith, B. Snow, J. Scheetz, and L. Lang.

The inspector stated the purpose of the inspection (reference Paragraph 2.b above) and asked for all information regarding fire stops (flame-barrier) requirements for cabling at Ginna Unit No. 1.

The licensee stated that they had determined that there were no requirements for fire stops for cabling at Ginna Unit No. 1.

3. Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety Related Cables and Penetration Seals

a. Requirements

The inspector requested the original installation specifications for cabling for the construction of the plant. The plant personnel produced, "Technical Specification, Electrical Work, Unit #1 R. E. Ginna Nuclear Power Plant, Rochester Gas and Electric Corporation, SP5451," dated October 20, 1967 for the inspector's review. The inspector found in Paragraph 4.26.17, "Installation of cables Where entrance is made by the constructor, into pressurized rooms or into Class I structures, for conduit or cables...these openings shall be suitably sealed...Where cables extend through floors a fire stop of fiberglass matting...shall be installed in the trays. This also applies to all circuits into the main control panel."

The inspector found the following statement in Paragraph 8.2.2, Station Distribution System, General Cable Considerations, Ginna Unit No. 1, FSAR, Page 8.26C, dated January 1969:

> "Fire barriers are used at cable trays and cable runs where they enter or leave a Class I area. There will be fire barriers where the cable trays enter the relay room, auxiliary building, and where vertical trays pass through floor openings."

Class I structures as defined by the Ginna, FSAR include the following areas:

(1) Containment.*
(2) Intermediate Building.
(3) Auxiliary Building.
(4) Control Room.
(5) Diesel Generator Room.
(6) Screen House.
(7) Spent Fuel Pit
(8) Fuel Transfer Tube.*
(9) Containment Crane.*

* Outside the scope of the inspection.

There are no plant requirements for fire-retardant coatings. The plant does have specifications for the procurement of fire-resistant cable.

b. Observations

The inspector observed the following areas to the requirements of Paragraph 3.a of this report with the conditions found as noted.

(1) Control Room

The penetrations go through the floor to the relay room via short, open sections of conduit set in the concrete. The cables enter the conduits and the void spaces around the cables are packed with a fiberglass type material. All instrument and control cabinets were inspected and several were found with the packing material lying beside the penetration. There was a considerable amount of maintenance being performed to account for some of them not being packed.

(2) Relay Room

A cable tray passing through the north wall was found not to have a flame barrier. The majority of the cables come from the control room, which is directly above, and the penetrations were inspected from there.

(3) Emergency Battery Rooms 1A and 1B

Cable penetrations through the east and west walls of Battery Room 1A were found not to have flame barriers.

(4) Control Room Air Handling Room

This room is directly below the relay room and carries a large number of cables to the cable tunnel from the relay room. This is a vertical penetration, with evidence of work in progress, which accounts for the flame barrier being disturbed.

(5) Cable Tunnel

The cable tunnel is "T" shaped and connects the intermediate building, auxiliary building, and the relay

room through the control room air handling room (CRAH). The end of the tunnel that enters the CRAH is protected by a flame barrier but the intermediate and auxiliary buildings (which are essentially directly connected, as evidenced by the considerable air flow through the tunnel) are not protected by flame barriers at their entrances to the cable tunnel. This tunnel is protected by a water sprinkler and smoke detection system.

(6) Intermediate Building

The intermediate building is divided into "controlled" and "uncontrolled" sections. There is a vertical cable tray that passes through several floors by the elevator and has no flame barrier material installed. There is a penetration through the wall into the water treatment room with no flame barrier. Both of these are located in the "uncontrolled" section.

(7) Diesel Generator Rooms (DGR)

(a) DGR "A" There is a room directly beneath the DGR through which the generator cables and control cables pass. The cables penetrate the ceiling of this room (floor of DGR). The cables coming from the motor control center "1H" have flame barrier material, while those of the relay cabinet do not.

(b) DGR "B" The same arrangement of rooms and cables exist for DGR "B" and none of these had flame barrier material.

(8) Screen House

Cabling penetrates the southeast wall by the stairs and contains no flame barrier material. Several electrical cabinets are located within the screen house but were inaccessible for inspection. Safeguard cabinets 17 and 18 were inspected and found to have no flame barrier material where the cabling penetrates the floor.

(9) Spent Fuel Pit (SFP)

The access door from the intermediate building to the SFP has a cable tray above the door without a flame barrier.

(10) Auxiliary Building

In the auxiliary building there are cable penetrations leaving through the east wall at the intermediate level with no flame barrier material.

There are several motor control centers and assorted electrical panels in the auxiliary building which were inaccessible for inspection. Those that were accessible contained no flame barrier material for cables passing through the floors.

The lack of flame barrier material in the relay room, the cable tunnel entering the auxiliary building, the intermediate building, the screen house, the spent fuel pit, and the auxiliary building is apparently contrary to the FSAR commitment as stated in Paragraph 3 above. The inspector could not ascertain if this lack of flame barrier material in the penetrations resulted from modifications in which flame barrier material was deemed to be not safety-related and, therefore, deleted.

This item is considered unresolved, pending the completion of the licensee's review action per 10 CFR 50.59 and a subsequent review by an NRC inspector of the licensee's review and any modification action.

4. Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

The inspector did not find any specific requirements for the maintenance of flame barriers during routine maintenance and no evidence that it is addressed in modification instructions.

This item is considered unresolved, pending the completion of the licensee's review action per 10 CFR 50.59 and a subsequent review by an NRC inspector of the licensee's review and any additional procedural documentation that he prepares relative to maintenance and modification of safety-related cable penetration seals.

5. Status of Licensee's Efforts re IE Bulletins 75-04 and 75-04A

The licensee indicated that approximately 75% of the procedures review required by the bulletins were completed at this time.

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U. S. NUCLEAR REGULATORY COMMISSION

OFFICE OF INSPECTION AND ENFORCEMENT

REGION I

E Inspection Report No: 50-333/75-07 Docket No: 50-333

icensee: Niagara Mohawk Power Corporation License No: DPR-59

300 Erie Boulevard West Priority:

Syracuse, New York 13202 Category: B

Safeguards Group:

ocation: James A. FitzPatrick Nuclear Power Plant
Scriba, New York

ype of Licensee: BWR (GE), 2436 MW(t)

ype of Inspectio: Special, Announced

tes of Inspection: April 29 - May 2, 1075

Dates of Previous Inspection: April 16-18, 1975

Reporting Inspector: J. T. Shedlosky, Reactor Inspector — 5/16/75 DATE

Accompanying Inspectors: DATE

DATE

DATE

Other Accompanying Personnel: DATE

Reviewed By: W. Boyce (for) — 5/16/75 DATE
R. C. Haynes, Senior Reactor Inspector

SUMMARY OF FINDINGS

Enforcement Action

A. Items of Noncompliance

Infraction

Correlation between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals.

Contrary to the requirements of 10 CFR 50.59, the Safety Analysis Report Section 8.5.4.2 and J. A. FitzPatrick Installation Instruction for Raceways Section IV, F.3 changes have been made in the facility safety related seals from what was described in the Safety Analysis Report. The licensee had not performed a safety evaluation which provided the basis for the determination that the changes did not involve an unreviewed safety question. (Details, Paragraph 3.b.)

B. Deviations

None

Licensee Action on Previously Identified Enforcement Items

Not applicable

Design Changes

None identified

Unusual Occurrences

None identified

Other Significant Findings

A. Current Findings

1. Acceptable Areas

Not applicable

2. Unresolved Items

a. Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

Facility maintenance and modification procedures do not specifically reference the sealing of penetrations. Work to date has been done using construction specifications.

(Details, Paragraph 4)

B. Status of Previously Reported Unresolved Items

Not inspected

Management Interview

At the conclusion of the inspection, the inspector held a meeting at the site with the following personnel to discuss the inspection findings:

Niagara Mohawk Power Corporation

Mr. T. J. Perkins, Acting General Superintendent
Mr. R. W. Smith, Plant Superintendent
Mr. R. J. Pasternak, Operations Supervisor
Mr. J. H. Kerfien, Assistant Quality Control Supervisor

Power Authority of the State of New York

Mr. E. A. Abbott, Acting Resident Engineer
Mr. M. C. Cosgrove, Site Quality Assurance Engineer
Mr. H. Rickles, Electrical Engineer-Quality Assurance

Stone and Webster Engineering Corporation

Mr. A. B. Banko, Electrical Engineer
Mr. P. C. Kelleher, Senior Quality Control Engineer
Mr. H. Astle, Quality Control Engineer

The following items were discussed, and the inspector's findings were acknowledged by the licensee:

A. Purpose of the Inspection

The inspector stated that the purpose of this special, announced inspection was to examine the documented facility requirements for fire stops on safety-related cables and penetration seals, to visually inspect these items for conformance with the requirements, to examine the licensee's provisions for invoking the requirements during maintenance and modification work and to determine the status of the licnesee's efforts with respect to the actions listed in IE Bulletins 75-04 and 75-04A.

B. Items of Noncompliance

The inspector stated that he found the following item of noncompliance:

Infraction

Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals

Contrary to the requirements of 10 CFR 50.59, the Safety Analysis Report Section 8.5.4.2 and J. A. FitzPatrick Installation Instructions for Raceways Section IV.F.3 changes have been made in the facility safety related seals from what was described in the Safety Analysis Report. The licensee had not performed a safety evaluation which provided the basis for the determination that the changes did not involve an unreviewed safety question. (Details, Paragraph 3b.)

C. Current Findings: Unresolved Item

The inspector stated that the following item was observed and is considered to be unresolved:

Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures.

Facility maintenance and modification procedures do not specifically reference the sealing of penetrations. Work to date has been done using construction specifications. (Details, Paragraph 4.)

D. Status of Licensee's Efforts re IE Bulletins 75-04 and 75-04A

The licensee provided the inspector with a status report on his efforts in complying with the requirements of IE Bulletins Nos. 75-04 and 75-04A. (Details, Paragraph 5.)

DETAILS

1. Persons Contacted

Niagara Mohawk Power Corporation

Mr. R. W. Smith, Plant Superintendent
Mr. R. J. Pasternak, Operations Supervisor
Mr. J. H. Kerfien, Assistant Quality Control Supervisor

Power Authority of the State of New York

Mr. E. A. Abbott, Acting Resident Engineer
Mr. M. C. Cosgrove, Site Quality Assurance Engineer
Mr. H. Rickles, Electrical Engineer-Quality Assurance

Stone and Webster Engineering Corporation

Mr. H. Astle, Quality Control Engineer
Mr. G. B. Banko, Electrical Engineer
Mr. A. R. FitzPatrick, Electrical Engineer
Mr. P. C. Kelleher, Senior Quality Control Engineer
Mr. J. M. Lilly, Electrical Engineer
Mr. J. Ronco, Construction Supervisor, Electrical
Mr. W. Sanborn, Advisory Operations

2. General

a. Plant Status

The plant was shut down for a maintenance outage. Reactor startup is pending the completion of a special startup test program of the emergency diesel generator.

b. Purpose of Inspection

The purpose of this inspection was to examine the documented facility requirements for fire stops on safety-related cables and penetration seals, to visually isnpect these items for conformance with the requirements, to examine the licensee's provisions for invoking the requirements during maintenance and modification work and to determine the status of the licensee's efforts with respect to the actions list in IE Bulletins 75-05 and 75-04A.

3. Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals.

a. Requirements

(1) Final Safety Analysis Report, Section 8.5.4.2 "Cables and Raceways," states in part: "Fire Stops - Fire stops are provided for cabling at walls, partitions and floors separating areas."

(2) Installation Instructions

The installation instructions for raceways dated September 20, 1971 and revised through September 22, 1972, Section I "General," states "This document covers the procedures, instructions and documents to be used and followed for installation of all cables. Section IV. F.3, "Protection of cables" states, in part: "After completion of the cabling system, all sleeves shall be sealed. If sleeves are unused, metal plugs shall be used; if sleeves carry cables, they shall be packed with an approved flameproof material to provide an adequate fire stop."

(3) TWX's

(J. Wainrib, Project Manager, Stone and Webster Engineering Corp. (SWEC), and D. Feldtmose, Chief Engineer, (SWEC) to G. Goodman, Construction Manager, (SWEC), "Methods Used for Installation of Foam Sealant in Electrical Sleeves," dated 12/19/73 and "Sealing of Electrical Sleeves and conduits for Reactor Building Pressurization" dated 1/18/74).

These teletyped instructions directed the sealing of reactor building penetrations with foam sealant. The type of foam sealant is not referenced. Sleeves to be filled are referenced by drawing and detail. The foam sealant is to be applied and a sleeve filled to within two inches of the end of the sleeve. Sleeves tied to conduit are to be filled from the open side or by slipping back the conduit on one side. Sealing other than the reactor building penetrations is not referenced. This document did not fully implement the requirements of paragraphs a (1) and (2) above in that it did not contain detailed installation instructions or cover all penetrations.

(4) Procurement Specifications

(a) Cable

The following specifications were reviewed. The insulation, jacket, fillers and binding tape materials are as indicated. Required shop tests on each reel are stated:

APO 76-600 volt power cable

Insulation characteristics:	Cross-linked polyethylene
Jacket:	Neoprene
Fillers:	Non-hygroscopic self-extinguishing
Binding Tape:	Neoprene filled cotton self-extinguishing

Shop tests include a horizontal flame test.

APO 7D - 500 volt power cable

Insulation characteristics:	Cross-linked polyethylene
Binding Tape:	Neoprene filled cotton tape flame-resistant

Shop tests include a horizontal flame test.

APO 88B - 600-1000 volt control cable

Insulation characteristics:	Cross-linked polyethylene flame retardant
Jacket:	Neoprene flame retardant

Shop tests include:

Individual conductors pass a vertical flame test in accordance with ASTM D2633 completed cable pass a cable tray fire propagation test described in APO-88B.

APO 88C - 600-1000 volt cable

Insulation characteristics:	Cross-linked polyethylene flame resistance, pass ASTM D-2633
Jacket:	Neoprene, ASTM D-752 flame resistance, pass IPCEA vertical flame test
Fillers:	Neoprene flame resistance, pass IPCEA vertical flame test
Binding Tape:	Mylar, Asbestos Tape

Shop tests include:

A vertical flame test in accordance with ASTM D-2633. Completed Cable pass a cable tray fire propagation test described in APO-88C.

APO-88D - 1000 volt shielded control cable

Insulation characteristics:	Cross-linked polyethylene flame resistant
Jacket:	Neoprene flame resistant
Fillers:	Neoprene flame resistant
Binding Tape:	Glass and or Asbestos Non-buring

Shop tests include:

A vertical flame test in accordance with ASTM D-2633. Completed cable pass a cable tray fire propagation test described in APO 88D.

APO-89 instrument cable

Insultation characteristics"	Cross-linked polyethylene flame resistant
Jacket:	Neoprene flame resistant
Fillers:	Neoprene flame resistant
Binding Tape:	Glass and or Asbestos Non-burning

Shop tests include:

A vertical flame test in accordance with ASTM D-2633. Complete cable pass a cable tray fire propagation test described in APO-89

APO-101 special instrument cable

Insulation characteristics:	Alkane-Inide Polymer and cross linked radiation resistant poloyolefin or Razolin F or Flamtrol
Jacket:	Flame retardant, nor corrosive cross-linked poloyolefin or Radiation Cross linked Flamtrol

Shop tests include:

A vertical flame tests in accordance with IPCEA S-19-81, paragraph 6.19.6. A cable tray fire propagation test described in APO-101.

APO - 148 Coaxial Cable

Insulation characteristics: Payolin F

Jacket: Flamtrol

Shop tests include:

A vertical flame test in accordance with IPCEA S-19-81, paragraph 16.19.6.

(b) Foam sealant

APO F 14345 Urethane foam.

High compressive foam, self extinguishing in accordance with ASTM 1692-59T.

The licensee has qualified this foam to act as a fire barrier by testing in accordance with IEEE 383.

b. Observations

(1) Areas examined

Reactor Building

(300' elevation)
(344' elevation)
(326' elevation)
(300' elevation)
(300' elevation) recirculation MG set room
(272' elevation)

Administration Building

(300' elevation) Control room air conditioning equipment room,
(300' elevation) Control room,
(284' elevation) Relay Room,
(286' elevation) Cable tunnels
(272' elevation) Cable room
(272' elevation) Battery rooms,

Turbine Building

(272' elevation) Electrical Switchgear rooms
(258' elevation) Cable Tunnels

Screenwell Pumphouse

(260' elevation) Emergency Service water Pump rooms

Emergency Diesel Generator Building

(272' elevation)

(2) Findings

a. The inspector found that penetrations through floors within the reactor building were not sealed.

(344' elevation: 20 penetrations)
(326' elevation: 22 penetrations)
(272' elevation: 2 penetrations)

b. The inspector found the pull rope in two sealed conduit openings into the cable tunnel (Administration building, 284' elevation).

c. The inspector found that penetrations through the walls of the battery rooms were not sealed. These carried safety related cabling. (Administration building, 272' elevation 27 penetrations.)

d. The inspector found that penetrations through the walls and ceiling of cable tunnels carrying safety related cabling were not sealed. These penetrations were between the cable tunnel and the emergency service water rooms, the emergency diesel generator rooms, the electrical switchgear rooms and the other cable tunnel. (Turbine Building, 258' elevation: 361 penetrations.)

The licensee had not performed a safety evaluation which provided a basis for determining that these changes from the FSAR requirements did not involve an unreviewed safety question. The inspector then cited the licensee for an infraction of 10 CFR 50.59, which states, in part.... "The holder of a license ... who desires ... to make a change in the facility ... described in the safety analysis report ... which involve an unreviewed safety question or a change in technical specifications, shall submit an application for amendment of his license pursuant to para. 50.90."

4. Invokement of Facility Requirements for Eire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures.

The licensee has no mainte. ance or modification procedures relating to penetration seals. The licensee stated that since construction forces are on site any maintenance or modifications would be done in accordance with the construction installation procedures. This item is considered unresolved pending NRC review of documented site instructions which direct the use of construction installation procedures for penetration maintenance and modifications.

5. Status of Licensee's Efforts re IE Bulletins 75-04 and 75-04A

The licensee has responded to Bulletin 75-04. He has also committed to developing procedures for leak testing penetrations. In the response to bulletin 74-04 the licensee stated that the review required by Bulletin 75-04A would be completed by May 19, 1975.

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U. S. NUCLEAR REGULATORY COMMISSION

OFFICE OF INSPECTION AND ENFORCEMENT

REGION I

IE Inspection Report No: 50-277/75-08 and 50-278/75-11

Docket No: 50-277, 50-278

License No: DPR-44, DPR-56

Licensee: Philadelphia Electric Company
2301 Market Street
Philadelphia, Pennsylvania 19101

Priority:

Category: C

Safeguards Group:

Location: Peach Bottom 2 & 3, Delta, Pennsylvania

Type of Licensee: BWR, 1065 MWe (GE)

Type of Inspection: Special, Announced

Dates of Inspection: April 25, 30-May 2, 1975

Dates of Previous Inspection: April 16-18, 1975

Reporting Inspector: W. H. Baunack, Reactor Inspector — 5/14/75 DATE

Accompanying Inspectors: (April 25, 1975) L. W. Gage, J. P. Durr, — 5/14/75 DATE

G. Napuda and K. E. Plumlee — 5/14/75 DATE

DATE

Other Accompanying Personnel: None — DATE

Reviewed By: R. C. Haynes, Senior Reactor Inspector — 5/14/75 DATE

SUMMARY OF FINDINGS

Enforcement Action

A. Items of Noncompliance

None

B. Deviations

None

Licensee Action on Previously Identified Enforcement Items

Not applicable

Design Changes

None identified

Unusual Occurrences

None identified

Other Significant Findings

A. Current Findings

1. Acceptable Areas

a. Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals

A visual examination was performed of the installation of fire barriers and compartment boundary seals, and the application of fire-retardant coating, for safety-related cables. There is correlation between this construction and the facility's documented requirements. (Details, Paragraph 3)

b. Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

No maintenance or modifications have been necessary which disturbed fire stops or penetration seals and the licensee has not had to invoke this requirement. (Details, Paragraph 4)

2. Unresolved Items

None

B. Status of Previously Reported Unresolved Items

Not inspected

Management Interview

A management interview was conducted on May 2, 1975 with the following personnel to discuss the inspection findings:

Philadelphia Electric Company

Mr. W. T. Ullrich, Station Superintendent
Mr. R. S. Fleishmann, Assistant Station Superintendent
Mr. J. E. Winzenried, Engineer, Station Economy
Mr. R. Orndorff, Electrical Construction Foreman
Mr. J. Warnock, Electrical Mechanic

Items discussed are summarized below:

A. Purpose of the Inspection

The inspector stated that the purpose of this special, announced inspection was to examine the documented facility requirements for fire stops on safety-related cables and penetration seals, to visually inspect these items for conformance with the requirements, to examine the licensee's provisions for invoking the requirements during maintenance and modification work and to determine the status of the licensee's efforts with respect to the actions listed in IE Bulletins 75-04 and 75-04A.

B. Current Findings: Acceptable Areas

The inspector stated that his review of the following areas revealed acceptable findings:

1. Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals

   A visual examination was performed of the installation of fire barriers and compartment boundary seals, and the application of fire-retardant coating, for safety-related cables. There is correlation between this construction and the facility's documented requirements. (Details, Paragraph 3)

2. Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

   No maintenance or modifications have been necessary which disturbed fire stops or penetration seals and the licensee has not had to invoke this requirement. (Details, Paragraph 4)

C. Status of Licensee's Efforts Regarding IE Bulletins 75-04 and 75-04A

The licensee provided the inspector with a status report on his efforts in complying with the requirements of IE Bulletin Nos. 75-04 and 75-04A. (Details, Paragraph 5)

DETAILS

1. Persons Contacted

Mr. W. T. Ullrich, Station Superintendent
Mr. R. S. Fleishmann, Assistant Station Superintendent
Mr. R. Orndorff, Electrical Construction Foreman
Mr. J. Warnock, Electrical Mechanic
Mr. J. Kalloz, Field Engineer, Electrical Engineering

2. General

a. Plant Status

Both units operating at power.

b. Purpose of the Inspection

The purpose of this inspection was to examine the documented facility requirements for fire stops on safety-related cables and penetration seals, to visually inspect these items for conformance with the requirements, to examine the licensee's provisions for invoking the requirements during maintenance and modification work and to determine the status of the licensee's efforts with respect to the actions listed in IE Bulletins 75-04 and 75-04A.

To determine the work effort involved in performing this inspection, a meeting was held with the licensee on April 25, 1975, to review fire stop and penetration seal specifications and to physically examine the application of fire stops. At the conclusion of the meeting the licensee was informed that a detailed inspection was scheduled for the following week.

3. Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals

a. Requirements

The licensee's construction specifications relating to fire stops and penetration seals for safety-related cables were reviewed in detail. The following are the principle requirements which relate to fire stops and penetration seals:

(1) Openings for cables entering control equipment, switchgear, load centers, motor control centers from cable tray systems located above or below the equipment shall be effectively sealed against dust, moisture and fumes, after cable pulling operations have been completed.

(2) All conduits and trays penetrating walls and floors entering the Class I structures below elevation 138'-0" except Emergency Switchgear Room area below elevation 135'-0", must be sealed watertight at the structure wall. Class I structures include Reactor Building for Units 2 and 3, Radwaste Building, Diesel Building, Emergency Equipment Room of Pump Structure for Units 2 and 3 and Emergency Switchgear Room in Turbine Building for Units 2 and 3.

(3) All tray penetrations in ceilings, floors, and walls shall be provided with fire barriers (stops).

(4) Fire barriers (stops) shall be installed in vertical trays. The distance between barriers shall not exceed 20 feet.

(5) All conduits passing through the Reactor Building interior walls shall be sealed watertight if below elevation 111'-0". Tray runs will not penetrate walls below 111'-0".

b. Observations: Seals

The following are the primarily used fire stop and penetration seals in the areas listed:

(1) Conduit and cable tray penetrations through any wall or floor which forms a part of the boundaries of the Secondary Containment employ one of the following:

Flamemastic and marinite board on each side of penetrations with high density polyurethane foam between, or concrete.

(2) Cable penetrations into Control Room Cabinets - Concrete or Grout and Kaowool.

(3) Penetrations through walls, floors or ceilings, including cable spreading room.

Marinite board sprayed with flamemastic.

c. Observations: Materials

The following are the principle materials specified for use in fire stops and penetrations seals.

(1) Marinite board 36 or 65, 1/2 inch thick. (Mfg. by Johns-Manville)

(2) Flamemastic 71A mastic.

(3) Cellular concrete.

(4) Kaowool - Inorganic thermal insulating wool. (Mfg. by Babcock and Wilcox)

(5) Polyurethane foam (Insta-Foam 120).

Note: Foam not visable in penetrations - purchase orders for material reviewed.

d. Observations: Procedures and Specifications

Procedures for the preparation of materials used for fire stops were available for review as were detailed prints and specifications for each type of fire stop.

e. Observations: QC Inspection of Waterproofing and Fire Stop Installation

The licensee's procedure for inspection of conduit and raceway waterproofing and fire stops was reviewed. Samples of documented results of these QC inspections were reviewed and appeared to be conducted in accordance with the procedure.

f. Observations: Inspection of Facility

A detailed inspection of Units 2 and 3 was conducted to visually inspect the installation of fire stops and penetration seals. All accessible areas were inspected. This included better than 90% of all safety-related cable. All fire stops and penetration seals on safety-related cable appear to have been installed as specified.

g. Observations: Testing Performed

The licensee has performed tests to determine the degree of fire resistance in cable (February 17, 1970) and to determine the effectiveness of a representative polyurethane penetration seal (April 3, 1975).

4. Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

Maintenance and modification which requires removal and or modification to fire stops or penetration seals was discussed with the licensee. The licensee stated that no work has been done to date which required the modification or removal of fire stops or penetration seals. The licensee's current Administrative Procedures would require proper restoration following maintenance or modification.

5. Status of Licensee's Efforts re IE Bulletins 75-04 and 75-04A

The licensee's Construction Division has completed their review of policies, work practices and procedures.

The licensee's Engineering Department has completed their review of the design of floor and wall penetration seals for flamability of materials.

A procedure for the control of ignition sources is in draft.

The above items are updates to the licensee's response to IE Bulletin No. 75-04A. The remainder of the licensee's actions are as described in their IE Bulletin No. 75-04A response.

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U. S. NUCLEAR REGULATORY COMMISSION

OFFICE OF INSPECTION AND ENFORCEMENT

REGION I

IE Inspection Report No: 50-219/75-13

Docket No: 50-219

Licensee: Jersey Central Power and Light Company

License No: DPR-16

Madison Avenue at Punch Bowl Road

Priority: -

Morristown, New Jersey 07960

Category: C

Safeguards Group: -

Location: Oyster Creek, Forked River, New Jersey

Type of Licensee: 1930 MWt, BWR

Type of Inspection: Special, Announced

Dates of Inspection: May 5-7, 1975

Dates of Previous Inspection: April 28-May 1, 1975

Reporting Inspector: Edward A. Freeman (for) — 5/20/75
K. W. Plumlee, Reactor Inspector — DATE

Accompanying Inspectors: None — DATE

DATE

DATE

Other Accompanying Personnel: None — DATE

Reviewed By: W. Boyce (for) — 5/20/75
R. C. Haynes, Senior Reactor Inspector — DATE

SUMMARY OF FINDINGS

Enforcement Action

A. Items of Noncompliance

None

B. Deviations

None

Licensee Action on Previously Identified Enforcement Items

Not applicable

Design Changes

None Identified

Unusual Occurrences

None Identified

Other Significant Findings

A. Current Findings

1. Acceptable Areas

Correlation Between the Facility's Requirements and the As-Built Status of Fire Stops on Safety-Related Electrical Cables and Penetration Seals

A visual examination was performed of fire barriers and compartment boundary penetration seals for safety-related electrical cables. The observed construction of these items correlated with the documented requirements for this facility. (Details, Paragraph 3)

2. Unresolved Items

a. Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

An examination was made of the licensee's documented policies and procedures for maintenance and modification

of fire stops on safety-related electrical cables and penetration seals. The licensee is currently reviewing these and will inform IE:I by June 1, 1975 of the results of current efforts. (Details, Paragraph 5)

b. Specific Areas of Concern re: Penetration Sealing

The following items are unresolved*:

(1) Cable routing
(2) Combustible seal material
(3) Fire retardant coating
(4) Battery room cable run
(5) Fire stops, seals and closures of penetrations in turbine building, equipment building, and reactor building interior walls and floors.

B. Status of Previously Reported Unresolved Items

Not inspected

Management Interview

At the conclusion of the inspection the inspector held a meeting at the site with the following personnel to discuss the inspection findings:

Jersey Central Power & Light Company

D. A. Ross**, Manager Generating Stations - Nuclear
J. T. Carroll, Station Superintendent
D. L. Reeves, Chief Engineer
E. I. Riggle, Maintenance Supervisor

The following items were discussed and the inspector's findings were acknowledged by the licensee:

A. Purpose of the Inspection

The inspector stated that the purpose of this inspection was to examine the documented facility requirements for fire stops on safety-related cables and penetration seals, to visually inspect these items for conformance with the requirements, to examine the licensee's provisions for invoking the requirements during maintenance and modification work and to determine the status of the licensee's efforts with respect to the actions listed in IE Bulletins 75-04 and 75-04A.

* Details, Paragraph 4

** Participated by telephone conference circuit

B. Current Findings: Acceptable Areas

1. Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals

A visual examination was performed of fire barriers and compartment boundary penetration seals for safety-related electrical cables. The observed construction of these items correlated with the documented requirements for this facility. (Details, Paragraph 3)

C. Unresolved Items

1. Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

An examination was made of the licensee's documented policies and maintenance and modification procedures for fire stops on safety-related electrical cables and penetration seals. The licensee is currently reviewing these matters and will inform IE:I by June 1, 1975 of the results of current efforts. (Details, Paragraph 5)

2. Specific Areas of Concern re Penetration Sealing

The following items are unresolved*:

a. Cable routing
b. Combustible seal material
c. Fire retardant coating
d. Battery room cable run
e. Fire stops, seals and closures of penetrations in turbine building, equipment building, and reactor building interior walls and floors.

D. Status of Licensee's Efforts re IE Bulletins 75-04 and 75-04A

The licensee's follow-up to IE Bulletins 75-04 and 75-04A includes the development of procedure preparation guidelines and certain procedures and possibly the installation of a fire suppression system. (Details, Paragraph 6)

* Details, Paragraph 4

DETAILS

1. Persons Contacted

Jersey Central Power & Light Company

J. T. Carroll, Station Superintendent
D. Reeves, Chief Engineer
W. Riggle, Maintenance Supervisor
D. VanNortwick, Plant Electrician B

2. General

a. Plant Status

The plant was in a refueling outage during this inspection.

b. Purpose of Inspection

The purpose of this inspection was to examine the documented facility requirements for fire stops on safety-related cables and penetration seals, to visually inspect these items for conformance with the requirements, to examine the licensee's provisions for invoking the requirements during maintenance and modification work and to determine the status of the licensee's efforts with respect to the actions listed in IE Bulletins 75-04 and 75-04A.

3. Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Safety-Related Electrical Cables and Penetration Seals

a. Requirements on Cables and Penetrations

(1) FSAR and Technical Specification Requirements

Sealed penetrations are required for containment integrity in the reactor building (secondary containment) walls.

Isolation required for 4160 volt dual emergency circuits includes a firewall between the switchgear; physical separation of bus sections, feeders, power centers and motor control centers; and enclosure of feeders to vital equipment in rigid steel conduit.

(2) Other Requirements

Insulation on power cables and control cables was stated to be self-extinguishing material (either GE VULKENE or FLAMINOL brand).

b. Observations

(1) Acceptable Areas

Visual examination of the electrical cable trays, conduits and penetration seals verified the correlation between as-built construction and the above requirements, as follows:

Control room floor penetrations were examined, and 769* appeared to be sealed. Two others were found not sealed and the licensee sealed them before the completion of the inspection.

The licensee stated that nine others, that could not be examined because of physical location, were sealed.

Except for a few unused thimbles closed off by steel discs and plastic bushings, the control room penetrations appeared to be sealed by a (dry) mineral wool** packing material.

Reactor building (secondary containment) wall and roof penetrations were examined. All 167*** electrical cable trays, conduits and spare thimble penetrations identified appeared to be sealed (described below). The licensee stated that a typical cable tray penetration seal was:

(a) (Original application) two injections were made (inner and outer seal) of pourable Kaowool which hardened in place.

(b) Periodic leak testing and resealing resulted in the additional application of one or more of:

Pourable Kaowool or similar material
Dry packed Kaowool or similar mineral wool
Duxseal
Isofoam

* Inspector's count
** Kaowool, manufactured by Babcock & Wilcox
*** Inspector's count

Inspection of the 4160 volt ducts and switchgear verified that isolation was provided as described by paragraph 3.a.(1).

Inspection of the emergency diesel generator rooms and cables verified that isolation was provided and there was a concrete wall between the diesel generators and between the two control panels.

Fire-fighting equipment was visible. As an example a fire hose and portable fire extinguishers were available near the entrance to the cable room.

The lower bays of the turbine building were equipped with automatic overhead sprinklers.

Insulation on power cables and control cables was examined on a sampling basis and was identified as either GE VULKENE or FLAMINOL, on each sample.

4. Specific Areas of Concern re Penetration Sealing

a. Cable Routing

The inspector examined a combination storage/cable pulling room containing 25 cable trays, 67 rigid conduits and 14 non-rigid* conduits. Areas connecting** to this room included:

Main cable room (openings 5X5 and 5X3 ft)
Pipe tunnel (opening 4X4 ft)
460 volt distribution room (opening 2X4 ft)
DC battery room (tunnel 5X6 ft)

The main cable room also has openings to an equipment room above the control room (a pipe chase opening, 2X10 ft, partly filled by ventilation ducts, conduits, pipes, etc.) and to the turbine building (nine cable trays through a corridor).

The inspector found that there were no cable-penetration fire stops. The licensee stated there was no requirement to provide cable fire stops, or to close up or seal the above openings.

b. Combustible Seal Material

The licensee's review of fire stops and seals following issuance of IE Bulletins 75-04 and 75-04A apparently identified Isofoam

* Greenfield type
** Estimated sizes of openings follow

as combustible. The licensee removed a piece of Isofoam from an electrical penetration seal. It was ignited and burned completely.

The licensee stated that the Isofoam was at most only an inch or two thick and did not extend from one side of the seal to the other; thus propagation of fire through a seal was stated to be unlikely.

No test data were available that would substantiate the licensee's position on flame resistance of seals. The licensee stated that there was no requirement to remove or coat over the Isofoam.

c. Fire Retardant Coating

No fire retardant coating was evident and the licensee did not commit to apply such coatings to electrical cables or penetration seals.

d. Battery Room Cable Run

All electrical cables supplied from battery room DC distribution panels A and B are collected into a single cable tray.

The licensee stated that the specifications do not require isolation of these cables.

e. Fire Stops, Seals and Closures of Penetrations in Turbine Building, Equipment Building, and Reactor Building Interior Walls and Floors

Turbine building, equipment building and reactor building interior wall and floor penetrations were examined where electrical cable trays, conduits and spare thimbles pass through. Typically, no seal or closure of these penetrations was evident. (No requirement was identified to seal or close the openings identified.)

The above items a through e are considered to be unresolved pending completion of the licensee's follow-up on IE Bulletin No. 75-04A and a subsequent review of their actions by an NRC inspector.

5. Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

Job orders are used to initiate work on cables, fire stops and penetration seals. The licensee's supervision controls the work to

be done, states what procedures are to be used, supervises work as it progresses, and accepts the completed job. However, no maintenance or modification procedures for penetration seals were provided by the licensee.

This item is considered to be unresolved pending completion of the licensee's review of their procedures as a part of the licensee's response to IE Bulletin No. 75-04A (Details, Paragraph 6) and subsequent review of their findings and actions by an NRC inspector.

6. Status of Licensee's Efforts re IE Bulletins 75-04 and 75-04A

The licensee's reply* to IE Bulletins 75-04 and 75-04A described their efforts on procedure preparation guidelines that specifically address the concerns of Item 3, parts a through e of IE Bulletin 75-04A. This is scheduled for completion by June 1, 1975.

* Licensee's letter to IE:I dated April 24, 1975

(Jan 75) (Rev)

U.S. NUCLEAR REGULATORY COMMISSION

OFFICE OF INSPECTION AND ENFORCEMENT

REGION I

IE Inspection Report No: 50-220/75-06

Docket No: 50-220

Licensee: Niagara Mohawk Power Corporation
300 Erie Boulevard, West
Syracuse, New York 13202

License No: DPR-63

Priority:

Category: C

Location: Nine Mile Point, Unit 1, Scriba, NY

Safeguards Group:

Type of Licensee: BWR (GE) 1850 MW(t)

Type of Inspection: Routine, Announced

Dates of Inspection: April 29 - May 2, 1975

Dates of Previous Inspection: April 15-18, 1975

Reporting Inspector: J. T. Shedlosky, Reactor Inspector — 5/19/75 Date

Accompanying Inspectors: NONE — Date

Date

Date

Date

Other Accompanying Personnel: NONE — Date

Reviewed By: R. C. Haynes, Senior Reactor Inspector — 5-19-75 Date

SUMMARY OF FINDINGS

Enforcement Action

A. Items of Noncompliance

None

B. Deviations

None

Licensee Action on Previously Identified Enforcement Items

Not Applicable

Design Changes

None Identified

Unusual Occurrences

None Identified

Other Significant Findings

A. Current Findings

1. Acceptable Areas

a. Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals

A visual examination was performed of the installation of fire barriers and compartment boundary seals, and the application of fire-retardant coating, for safety related cables. Generally there is correlation between this construction and the facility's documented requirements. (Details, Paragraph 3)

2. Unresolved Items

a. Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

Facility maintenance and modification procedures do not specifically reference the sealing of penetrations. Work to date has been done using the station's original construction specifications. (Details, Paragraph 4)

B. Status of Previously Reported Unresolved Items

Not Inspected

Management Interview

At the conclusion of the inspection, the inspector held a meeting at the site with the following personnel to discuss the inspection findings:

Niagara Mohawk Power Corporation

Mr. T. J. Perkins, Station Superintendent, Nine Mile Point
Mr. R. W. Smith, Plant Superintendent, J. A. FitzPatrick
Mr. R. J. Pasternak, Operations Supervisor, J. A. FitzPatrick
Mr. J. H. Kerfien, Assistant Quality Control Supervisor

The following items were discussed, and the inspector's findings were acknowledged by the licensee.

A. Purpose of the Inspection

The inspector stated that the purpose of this special, announced inspection was to examine the documented facility requirements for fire stops on safety-related cables and penetration seals, to visually inspect these items for conformance with the requirements, to examine the licensee's provisions for invoking the requirements during maintenance and modification work and to determine the status of the licensee's efforts with respect to the actions listed in IE Bulletins 75-04 and 75-04A.

B. Current Findings: Acceptable Areas

The inspector stated that his review of the following areas revealed acceptable findings:

1. Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals

A visual examination was performed of the installation of fire barriers and compartment boundary seals, and the application of fire-retardant coating, for safety related cables. Generally there is correlation between this construction and the facility's documented requirements. (Details, Paragraph 3)

C. Unresolved Items

The inspector stated that the following items were observed and are considered to be unresolved:

1. Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

Facility maintenance and modification procedures do not specifically reference the sealing of penetrations. Work to date has been done using the station's original construction specifications. (Details, Paragraph 4)

D. Status of Licensee's Efforts re IE Bulletins 75-04 and 75-04A

The licensee provided the inspector with a status report on his efforts in complying with the requirements of IE Bulletins Nos. 75-04 and 75-04A. (Details, Paragraph 5)

DETAILS

1. Persons Contacted

Niagara Mohawk Power Corporation

Mr. R. R. Schneider, Vice President - Electric Operations
Mr. T. J. Perkins, Station Superintendent
Mr. R. Baker, Maintenance Supervisor

2. General

a. Plant Status

The plant was operating at about 97% power.

b. Purpose of Inspection

The purpose of this inspection was to examine the documented facility requirements for fire stops on safety-related cables and penetration seals, to visually inspect these items for conformance with the requirements, to examine the licensee's provisions for invoking the requirements during maintenance and modification work and to determine the status of the licensee's efforts with respect to the actions listed in IE Bulletins 75-04 and 75-04A.

3. Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals

a. Requirements

(1) Final Safety Analysis Report

Supplement 4, Question 4, Response states in part: "Cable Penetrations - Cable penetrations of the primary containment (drywell and pressure suppression chamber), reactor building, auxiliary control room and the cable room below have been designed to provide adequate fire stop and to prevent a fire from spreading through the penetration. Reactor building penetrations consist of standard conduit (pipe) sleeves, which vary in diameter from 3/4" to 4", and which will be sealed at both ends with Duxseal. The auxiliary control room and the cable room below have

formed pipe sleeves. These sleeves will be sealed at the ends with rock-wool filler and externally applied fire-resistant material for fire proofing. CO_2 equipment is also provided in these two rooms as an added precaution".

"Protection in Hazardous Areas - Cables in trays which run through hazardous areas such as the diesel-generator rooms (oil fire or explosion) will be protected mechanically by the tray itself and will be coated with the externally applied fire-resistant material for fire resistance.

Tray shields over the top tray (raised to allow normal ventilation) will be provided at selected locations where an opening occurs above the tray to prevent hot weld material or missile damage from above.

Types of Cable

"Power Cable - 24-kv and 4160-volt cables are Kerite insulated with neoprene jackets.

Cables for 2400-volt service and below are Vulkene insulated. (General Electric Company trade name for cross-linked polyethylene)."

"Control Cable - General use, multi-conductor control cables are Vulkene insulated and 1000-volt rated (except supervisory control cable, which is 600-volt rated), with mylar binder tape and polyvinyl chloride (PVC) jacket overall.

Special controls cables for control-ride-drive instrumentation, area radiation monitors, etc. are multi-conductor PVC insulated, coordinated-voltage rated, with suitable binder tape and PVC jacket overall.

Single-conductor cable inside drywell penetration (AWG #8, #10 and #12) is General Electric Company extraflexible Vulkene insulated type SIS switchboard wire."

"Special Cable - Coaxial and triaxial cables generally are polyethylene insulated, with mylar tape wraps and polyethylene jackets.

Shielded cables generally are polyethylene insulated with PVC jackets.

Thermocouple extension wire is PVC insulated and jacketed except that in the drywell the vessel temperature thermocouple extension wires are magnesium-oxide insulated, with 304 stainless steel sheath."

(2) Installation Specifications

"Cable Tray Covers and Fire Protection, Details and Sections "Index 3-N2-E27, No. C-19448-C, dated 3/14/69".

Detail B - "Sealing of Wall Sleeves in Aux Control Room and Cable Room" requires Flamastic F-71 on both sides to seal all cavities over Kaowood ceramic fiber which fills the voids.

Detail E - "Vertical Tray thru Floor (261') opening (Tray 12 CAV only)", requires all voids filled with Kaowood ceramic fiber, the lower cover coated with Flamastic F-71 and a steel plate covering the top.

Detail F - "Sealing of Tray in Auxiliary Control Room Wall Sleeves C11 and C32", requires Flamastic F-71 over Kaowood ceramic fiber material filling voids.

Detail G - "Sealing conduits thru control room, auxiliary control room and cable room walls", requires sealing with "Duxseal" at both ends, and sealed on the exterior surface with motor.

Detail H and J - "Vertical Tray thru Floor", requires filling all voids with Kaowood ceramic fiber.

Detail L - "Vertical Tray thru Floor", requires filling voids with Kaowood ceramic fiber, a ¼ layer of Flamastic F-71 on the top of floor level and a 1/8" steel plate at the bottom.

Detail M - "Trays Passing thru Wall Sleeves", requires filling all voids with Kaowood ceramic fiber, a 1/8" steel plate on both sides and Flamastic F-71 on both sides.

"Wall Sleeves and Duct Banks in Reactor Building Walls", requires Duxseal on both ends of pipe sleeves.

These requirements appear to be in conformance with commitments made in the Safety Analysis Report.

(3) Procurement Specifications

Cable

Specification N-147, NMPNS for insulated cables for 4,160 volt power cables, June 17, 1965.

Insulation Characteristics: 5Kv, Kerite ground, polyvinal chloride

Jacket: Neoprene

Standards: the "latest" IPCEA Standards

Specification N-193, NMPNS for multiple conductor cables for controls and misc. purposes, dated February 21, 1966.

Insulation Characteristics: Vulkene

Jacket: Polyvinal Chloride, in accordance with IPCEA, S-61-402, Section 4.31.

Standards: the "latest" IPCEA Standards

Specification 2E, Revision 1, 600-1000 volt cable for stores, dated February 26, 1975.

Standards: IPCEA S-19-81, S-68-516, S-66-524 as applicable to insulation. All ASTM as applicable. Qualified in accordance with IEEE 383 (latest revision).

Control Cable
Insualtion: Vulkene
Jacket: Flamenol

Supervisory
Insulation: Vulkene
Jacket: Flamenol

Shielded Cable
Insulation: Polyethylene
Jacket: Flamenol

Coaxial Cable RG59 B/U
Insulation: Radiation resistant irradiated polyethylene

Copper Constantan
Insulation: Polzninal Chloride

Single Conductor 24K volt
Insulation: Kerite double permashield
Jacket: NS Neoprene

Single Conductor 4160 volt
Insulation: Kerite ground, Polyvinal Chloride or Vulkene or Polyvinal Chloride

Single Conductor 600 volt
Insulation: Vulkene RHH ground, polyvinal chloride UL approved

These purchase specifications represent those available at the site during the inspection.

b. Observations

The inspector visually inspected all safety-related cable penetrations, except those which could not be examined without interfering with the operation of the facility or removing material and equipment previously installed. Floors, walls and ceilings were examined in the following areas:

Turbine Building	
(300' elevation)	Reactor Building wall sleeves
(277' elevation)	Reactor Building wall sleeves
	Battery Rooms
	Control Room
(261' elevation)	Reactor Building wall sleeves
	Auxiliary Control Room
	Battery Power Board Rooms
	Diesel Generator Rooms
	Diesel Generator Board Rooms
(250' elevation)	Cable Room
	Reactor Building wall sleeves
	Reactor Building duct banks

Reactor Building
(340' elevation)
(318' elevation)
(301' elevation)
(281' elevation)
(261' elevation)

The inspector found that the installation of cable penetration seals and fire stops was generally in accordance with the licensee's commitments in the Safety Analysis Report and with the plant's construction specifications. Exceptions which were observed were:

(1) Auxiliary Control Room, two safety related penetrations through the floor require the Flamastic coating.

(2) Cable Room, one new penetration outside of the cable room requires a Flamastic coating. Two new penetrations inside the cable room require a Flamastic coating.

(3) Turbine Building, one Reactor Buiding Penetration 11-c, A-1) penetration (250' elevation) was not sealed with Duxseal. The inspector verified that this penetration was sealed within the Reactor Building.

(4) Reactor Building, several penetrations through the floor at various levels were not sealed with Duxseal. These were:

SL 318 M12 - 11A
SL 318 M12 - 11B
SL 281 N4 - 14A
SL 281 Q11 - 6B

All of these penetrations are within the reactor building.

Licensee representatives noted these findings and initiated action to correct these items. Full corrective action could not be accomplished during the inspection because of the need to procure material.

The inspector noted that the cable leaving control room panels to the auxiliary control room pass thorugh seventy-four openings below those panels. According to design these penetrations are open.

The inspector also noted that the pull ropes have been left in reactor building penetrations at the 250' elevation of the Turbine Building. This does not appear to be in accordance with the installation specifications.

4. Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

The licensee has no maintenance or modification procedures relating to penetration seals. The licensee stated that maintenance or modifications have been in accordance with the construction installation procedures. This item is considered unresolved pending NRC review of documented site instructions which direct the use of construction installation procedures for penetration maintenance and modifications.

5. Status of Licensee's Efforts re IE Bulletins 75-04 and 75-04A

The licensee has responded to Bulletin 75-04. He has also committed to developing procedures for leak testing penetrations. On the response to Bulletin 75-04 the licensee stated that the review required by Bulletin 75-04A would be completed by May 19, 1975.

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U. S. NUCLEAR REGULATORY COMMISSION

OFFICE OF INSPECTION AND ENFORCEMENT

REGION I

IE Inspection Report No: 50-245/75-09

Docket No: 50-245

Licensee: Northeast Nuclear Energy Company
P. O. Box 270
Hartford, Connecticut 06101

License No: DPR-21

Priority:

Category: C

Safeguards Group:

Location: Waterford, Connecticut (Millstone 1)

Type of Licensee: BWR 2011 MWt

Type of Inspection: Special, Announced

Dates of Inspection: April 28-30, 1975

Dates of Previous Inspection: April 21-23, 1975

Reporting Inspector: K. E. Plumlee — 5/13/75
K. E. Plumlee, Reactor Inspector — DATE

Accompanying Inspectors: _____ DATE

_____ DATE

_____ DATE

Other Accompanying Personnel: _____ DATE

Reviewed By: W. Brage / for — 5-13-75
R. C. Haynes, Senior Reactor Inspector — DATE

SUMMARY OF FINDINGS

Enforcement Action

A. Items of Noncompliance

None

B. Deviations

None

Licensee Action on Previously Identified Enforcement Items

Not applicable

Design Changes

None identifieid

Unusual Occurrences

None identified

Other Significant Findings

A. Current Findings

1. Acceptable Areas

Correlation Between the Facility's Requirements and the As-Built Status of Fire Stops on Safety-Related Electrical Cables and Penetration Seals.

A visual examination was performed of fire barriers and compartment boundary penetration seals for safety related electrical cables. The observed construction of these items correlated with the documented requirements for this facility. (Details, Paragraph 3)

2. Unresolved Items

a. Licensee's Review of Policies and Maintenance and Modification Procedures for Installation of Fire Stops on Safety-Related Electrical Cables and Penetration Seals.

An examination was made of the licensee's documented policies and maintenance and modification procedures for installation

of fire stops on safety-related electrical cables and penetration seals. The licensee is currently reviewing these matters and will inform the Region I Office of Inspection and Enforcement (IE:I) no later than June 1, 1975 of the results of the review and any changes made as a result of the review. (Details, Paragraph 4.)

b. Specific Penetration Questions

The following items are unresolved (Details, Paragraph 3.b.2.)

(1) Control room floor penetrations.

(2) Flame retardant coating on cables.

(3) Floor openings in the cable vault.

B. Status of Previously Reported Unresolved Items

Not inspected

Management Interview

At the conclusion of the inspection, the inspector held a meeting at the site with the following personnel to discuss the inspection findings:

Northeast Nuclear Energy Company

W. G. Counsil, Station Superintendent
E. R. Foster, Assistant Station Superintendent

Northeast Nuclear Utilities Service Company

J. Suma, Assistant Engineer, Generation, Electrical Engineering Department

The following items were discussed and the inspector's findings were acknowledged by the licensee:

A. Purpose of the Inspection

The inspector stated that the purpose of this special, announced inspection was to examine the documented facility requirements for

fire stops on safety-related cables and penetration seals, to visually inspect these items for conformance with the requirements, to examine the licensee's provisions for invoking the requirements during maintenance and modification work and to determine the status of the licensee's efforts with respect to the actions listed in IE Bulletins 75-04 and 75-04A.

B. Current Findings: Acceptable Areas

A visual examination was performed of fire barriers and compartment boundary penetration seals for safety-related electrical cables. The observed construction of these items correlated with the documented requirements for this facility. (Details, Paragraph 3)

C. Unresolved Items

Licensee's Review of Policies and Maintenance and Modification Procedures for Installation of Fire Stops on Safety-Related Electrical Cables and Penetration Seals.

a. An examination was made of the licensee's documented policies and maintenance and modification procedures for installation of fire stops on safety-related electrical cables and penetration seals. The licensee is currently reviewing these matters and will inform the Region I Office of Inspection and Enforcement (IE:I) no later than June 1, 1975 of the results of the review and any changes made as a result of the review. (Details, Paragraph 4.)

b. Specific Penetration Questions

The following items are unresolved (Details, Paragraph 3.b.2.)

(1) Control room floor penetrations.
(2) Floor openings in the cable vault.
(3) Flame retardant coating on cables.

D. Status of Licensee's Efforts re IE Bulletins 75-04 and 75-04A

the licensee's letters to Regional Office I dated April 17, and April 24, 1975 replied to IE Bulletins 75-04 and 75-04A and stated that further information would be provided in writing by June 1, 1975. (Details, Paragraph 5)

DETAILS

1. Persons Contacted

Northeast Nuclear Energy Company

W. G. Counsil, Station Superintendent
E. R. Foster, Assistant Station Superintendent
M. Hills, Operations Supervisor
J. Kiskunes, Plant Electrician (A)

NUSCO

R. Luther, Overhead/Underground Systems Engineer
A. Roby, Chief of Generation; Electrical Engineering Department
J. Suma, Assistant Engineer, Generation; Electrical Engineering Department

2. General

a. Plant Status

The plant was operating during this inspection.

b. Purpose of Inspection

The purpose of this inspection was to examine the documented facility requirements for fire stops on safety-related cables and penetration seals, to visually inspect these items for conformance with the requirements, to examine the licensee's provisions for invoking the requirements during maintenance and modification work and to determine the status of the licensee's efforts with respect to the actions listed in IE Bulletins 75-04 and 75-04A.

3. Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Safety-Related Electrical Cables and Penetration Seals.

a. Requirements on Cables and Penetrations

(1) FSAR and Technical Specification Requirements

Sealed penetrations are required for containment integrity in the reactor building (secondary containment) walls. No detailed specifications were provided for electrical penetration seals.

The licensee stated* that one or more of the following are used to seal electrical penetrations:

Hard setting sealant** inside trays and conduits.

Duct seal, alone or with other sealants.

Polystyrene blocks used with duct seal.

Conduit bushing and a steel disc, on unused sleeves.

Steel pipe plugs.

Separation of certain redundant systems, including Reactor Protection Systems RPS I and RPS II electrical cables, is required.

Metal clad ducts and switchgear are required for 4160 volt power circuits.

(2) Additional Requirements

The licensee stated plans to develop a satisfactory seal and to seal all penetrations of the control room floor. The followup report on Bulletin No. 75-04A, due to IE:I no later than June 1, 1975 is to state requirements being determined by the licensee's review of such matters.

b. Observations

(1) Acceptable Areas

Visual examination of the electrical cable trays, conduits and penetration seals verified the correlation between as-built construction and the requirements, stated above, as follows:

Reactor building (secondary containment) wall penetrations were examined. All 160 electrical cable trays, conduits and spare thimble penetrations identified appeared to be sealed.

* Licensee's letter to IE:I dated April 17, 1975.
** Typically Crouse-Hinds "Chico A" sealing compound.

Turbine building, equipment building, and reactor building interior wall and floor penetrations were examined where trays, conduits and spare thimbles pass through. Typically no seal or closure of these penetrations was evident. No requirement was identified to seal or close these openings.

Visual examination of 95 trays and conduits that penetrate the cable vault walls verified that all 28 penetrating secondary containment were sealed. No other sealed penetrations were identified in the cable vault walls.

Except for work described to be in progress and incomplete, all the cable vault cabling was in metal covered trays (non-ventilated). A few raised covers, removed covers, and exposed cables were seen (estimated to be below one percent of the total).

Trays labelled S-1 or S-2 (safety system cables) were separated by a fire barrier* wherever one passed over the other.

A wall separated the MPC-1 cable vault from the MPC-2 cable vault. Some apparently incomplete penetrations were evident. The licensee stated that these will be completed and sealed or closed up.

A thermal fire alarm system was provided in the cable vault.

CARDOX fire suppression system controls as well as a portable extinguisher and a fire hose were provided near the entrance to the cable vault.

Inspection of power cabling and switchgear verified that required fire barriers were provided and that:

4160-volt cables were segregated from lower voltage cables and were in metal ducts or conduits.

460-volt cables were segregated from cables operated at higher or lower voltages.

Separate conduits were used for cabling to the diesel engine driven and the gas turbine driven emergency generators.

* The barrier was a composition board covered with an asbestos cover on two sides.

(2) Specific Penetration Questions

(a) Control Room Floor Penetrations

Visual examination of 568 control room floor penetrations showed that duct seal was visible on 481, a drypacked mineral wool seal material was visible on 6, and no seal was visible on 81 penetrations. The licensee stated that study of possible techniques and procedures to seal these penetrations was being performed and their resolution of this matter would be reported to IE:I.

(b) Floor Openings in the Cable Vault

An approximately 3 ft. by 8 ft. floor grating and other openings were evident in the cable vault. The ventilation rate was estimated (by the inspector) at about 5,000 cfm passing through these openings.

(c) Flame Retardant Coating on Cables

No flame retardant coating was evident, and the licensee did not commit to apply such coating to electrical cables or penetrations.

The above items (a), (b), and (c) are considered to be unresolved pending a review by an NRC inspector upon completion of the licensee's followup on IE Bulletin 75-04A, which includes a review of such matters by the licensee.

4. Licensee's Procedures for Maintenance and Modifications to Fire Stops and Seals

Job orders are used to initiate work on cables, fire stops, and penetration seals. The licensee's supervision controls the work to be done, states what procedures are to be used, supervises work as it progresses, and accepts the completed job.

No detailed written procedures were identified during this inspection. This item is considered to be unresolved, pending a review by an NRC inspector, upon completion of the licensee's review of his procedures as a part of the response to IE Bulletin 75-04A.

5. Status of Licensee's Efforts re IE Bulletins 75-04 and 75-04A

The licensee's representative stated* that sealing of penetrations through the control room floor would be completed by May 15, 1975 except for those penetrations requiring techniques and procedures which are under review. (Paragraph 3.a.(2))

The licensee had obtained a test by Kerite Cable Company, Seymour, Connecticut of a penetration seal design that is being evaluated by the licensee.

The licensee's followup letter to the replies on Bulletins 75-04 and 75-04A is scheduled by June 1, 1975. The licensee's review of these matters is expected to be complete by that time and the following are expected to be resolved thereby:

a. Identification of cable penetrations to be sealed or repaired.

b. Techniques and procedures for sealing all penetrations still to be sealed or repaired.

c. Specifications for materials and the construction of cable penetrations.

* Followed up by telephone contact on May 2, 1975 (Greenman and Plumlee to Counsil).

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U. S. NUCLEAR REGULATORY COMMISSION

OFFICE OF INSPECTION AND ENFORCEMENT

REGION I

IE Inspection Report No: 50-309/75-07

Docket No: 50-309

Licensee: Maine Yankee Atomic Power Company
20 Turnpike Road
Westboro, Massachusetts 01581

License No: DPR-36

Priority:

Category: C

Safeguards Group:

Location: Wiscasset, Maine 04578 (Maine Yankee)

Type of Licensee: PWR, 2440 MWt (CE)

Type of Inspection: Special, Announced

Dates of Inspection: May 12-13, 1975

Dates of Previous Inspection: May 6-7, 1975

Reporting Inspector: [illegible] 5/22/75
J. F. Streeter, Reactor Inspector — DATE

Accompanying Inspectors: None — DATE

DATE

DATE

Other Accompanying Personnel: None — DATE

Reviewed By: [illegible] (for) 5-22-75
R. C. Haynes, Senior Reactor Inspector — DATE

SUMMARY OF FINDINGS

Enforcement Action

A. Items of Noncompliance

None

B. Deviations

None

Licensee Action on Previously Identified Enforcement Items

Not Applicable

Design Changes

None Identified

Unusual Occurrences

None Identified

Other Significant Findings

A. Current Findings

1. Acceptable Area

Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals

A visual examination was performed of the installation of fire barriers and compartment boundary seals for safety related cables. There is correlation between this construction and the facility's documented requirements in certain areas. (Details, Paragraph 3.)

2. Unresolved Items

a. Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

A lack of documented coverage was ascertained for maintenance and modification procedures for fire stops on safety-related cables and penetration seals. (Details, Paragraph 5.)

b. Specific Questions re Penetration Sealing

The inspector noted six cases where it appeared that the licensee's criteria for fire stops and boundary seals varied from the FSAR requirements or the architect-engineer's suggestions. (Details, Paragraph 4.)

B. Status of Previously Reported Unresolved Items

Not Inspected

Management Interview

At the conclusion of the inspection, the inspector held a meeting at the site with Mr. C. D. Frizzle, Assistant to the Plant Superintendent, to discuss the inspection findings.

The following items were discussed and the inspector's findings were acknowledged by the licensee:

A. Purpose of the Inspection

The inspector stated that the purpose of this special, announced inspection was to examine the documented facility requirements for fire stops on safety-related cables and penetration seals, to visually inspect these items for conformance with the requirements, to examine the licensee's provisions for invoking the requirements during maintenance and modification work and to determine the status of the licensee's efforts with respect to the actions listed in IE Bulletins 75-04 and 75-04A.

B. Current Findings

1. Acceptable Area

The inspector stated that his review of the following areas revealed acceptable findings:

Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals

A visual examination was performed of the installation of fire barriers and compartment boundary seals for safety related cables. There is correlation between this construction and the facility's documented requirements in certain areas. (Detaisl, Paragraph 3.)

2. Unresolved Items

a. Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

A lack of documented coverage was ascertained for maintenance and modification procedures for fire stops on electrical safety-related cables and penetration seals. (Details, Paragraph 5.)

b. Specific Questions re Penetration Sealings

The inspector noted six cases where it appeared that the licensee's criteria for fire stops and boundary seals varied from the FSAR requirements or the architect-engineer's suggestions. (Details, Paragraph 4.)

C. Status of Licensee's Efforts on IE Bulletins 75-04 and 75-04A

The licensee provided the inspector with a status report on his efforts in complying with the requirements of IE Bulletins 75-04 and 75-04A. (Details, Paragraph 6.)

DETAILS

1. Persons Contacted

Maine Yankee Atomic Power Company

Mr. C. D. Frizzle, Assistant to the Plant Superintendent
Mr. D. E. Moody, Plant Superintendent
Mr. R. Wilkinson, Electrician
Mr. E. C. Wood, Assistant Plant Superintendent

Stone and Webster Engineering Corporation

Mr. C. G. Pebler, Assistant Project Engineer

2. General

a. Plant Status

The plant was in a refueling shutdown during the inspection. Plant startup is not expected before June 15.

b. Purpose of Inspection

The purpose of this inspection was to examine the documented facility requirements for fire stops on safety-related cables and penetrations seals, to visually inspect these items for conformance with the requirements during maintenance and modification work and to determine the status of the licensee's efforts with respect to the actions listed in IE Bulletins 75-04 and 75-04A.

3. Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals

a. Requirements

The inspector reviewed the licensee's Final Safety Analysis Report to determine what requirements were established for fire stops. The FSAR in Section 8.3.7.7, states that "Fire stops are provided around trays and in sleeves which penetrate areas where carbon dioxide protection is used." The FSAR lists the CO_2 protected

areas outside reactor containment as the Cable Vault, both Outer Containment Penetration Rooms, and both Cable Tray Rooms.

The inspector requested all construction specifications and other applicable documentation related to facility requirements for fire stops or safety related cables and penetration seals. The licensee provided copies of communications between he and his architect-engineer and copies of engineering drawings showing conduit sleeves and cable runs. The communications indicated that the architect-engineer suggested the use of the following construction techniques:

(1) Use duct seal (putty-like compound) to seal conduits in the Control Room for the purpose of containing breathing air.

(2) Use duct seal to contain CO_2 in CO_2 protected areas.

(3) Use Flamemastic 71A to make a fire stop in conduit sleeves. ("Principal fire barriers" specifically mentioned were (a) the walls of the Switchgear and Control Room areas, and (b) the walls and floors of the Cable Tray Room, Reactor Containment MCC, and the Reactor Containment Outer Penetration Rooms.)

There is no requirement for the application of fire-retardant coatings on safety-related cables.

b. Observations

The inspector visually inspected all accessible safety-related cable penetrations in the following areas:

Control Room and Cable Chase
Cable Vault
Primary Auxiliary Building
Circulating Water Pump House
Reactor Containment Outer Penetration Rooms
Protected Cable Tray Room
Protected Switchgear Room
Emergency Diesel Generator Rooms
Reactor Containment MCC Rooms
Containment Spray Pump Area
Auxiliary Feed Pump (Motor) Area

The inspector generally found fire barriers and boundary seals installed in accordance with the licensee's criteria where safety-related cables pass through floors, walls, and ceilings. The fire barriers in most cases were installed by stuffing asbestos rope into a cable sleeve and filling in the well formed with Flamemastic 71A. The compartment boundary seals were composed of duct seal stuffed in penetrations or end caps on spare sleeves.

4. Specific Questions re Penetrations Sealing

The inspector noted six cases where it appeared that the licensee's criteria for fire stops and boundary seals varied from the architect-engineer's suggestions or the FSAR requirements.

(1) Wall Penetrations 11, 20, and 21 in the Protected Cable Tray Room were observed to be composed of a combination of Flamemastic 71A and duct seal. The seals were not all effective since air was noted to be passing from the turbine hall into the Protected Cable Tray Room.

(2) Wall Penetration 1 in the Protected Cable Tray Room was observed to have only the asbestos rope without Flamemastic 71A applied.

(3) One floor penetration in the lower Reactor Containment MCC Room had the boundary seal removed.

(4) Seventeen floor penetrations in the Control Room were not sealed.

(5) The licensee did not intend or attempt to seal conduit sleeves carrying safety-related power and control cables between the Protected Switchgear Room and the Protected Cable Tray Room, and between the upper and lower Reactor Containment MCC Rooms.

(6) Two conduits between the Cable Vault and the lower level of the Primary Auxiliary Building were not sealed. The inspector could not readily determine if all conduits that were not sealed in the Cable Vault (∿ 400) were sealed on the opposite end.

The licensee stated that he intends to consider these issues in his efforts related to IE Bulletins 75-04 and 75-04A. These items are unresolved pending IE:I evaluation of the licensee's Bulletin response and of any subsequent action that the licensee takes.

5. Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

The inspector determined from discussion with the licensee that there were no procedures available to plant personnel that addressed the issue of restoring fire stops and boundary seals disturbed during maintenance operations. The inspector also determined from discussions with personnel that some of the findings in paragraph 4 above resulted from not having fire stop and boundary seal restoration instructions.

The licensee stated that this will be addressed in his final response to IE Bulletins 75-04 and 75-04A. This item is unresolved pending IE:I evaluation of the licensee's Bulletin response and of any subsequent action that the licensee takes.

6. Status of Licensee's Response to IE Bulletins 75-04 and 75-04A

The inspector requested a status report from the licensee regarding IE Bulletins 75-04 and 75-04A. The licensee stated that a survey of the requirements of Bulletins 75-04 and 75-04A relative to the plant has been made and an evaluation is in progress. (The licensee mailed the NRC a letter, No. WMY 75-43, dated April 24, 1975, from J. L. French (Yankee Atomic Electric Company) to J. P. O'Reilly (U.S.N.R.C.). This letter provides a schedule for eleven different types of surveys and reviews being conducted by the licensee in response to Bulletins 75-04 and 75-04A. The final plant policy review is scheduled for completion on 9/30/75.)

The licensee stated that after definite criteria have been established for material to be used for various fire stops and boundary seals as part of his response to the Bulletins, he intends to conduct another indepth survey of existing stops and seals and modify them as necessary to reflect the criteria established.

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U. S. NUCLEAR REGULATORY COMMISSION

OFFICE OF INSPECTION AND ENFORCEMENT

REGION I

IE Inspection Report No: 50-247/75-06

Docket No: 50-247

Licensee: Consolidated Edison Company of New York, Inc.
4 Irving Place, New York, N.Y. 10003

License No: DPR 26

Priority:

Category: C

Safeguards Group:

Location: Indian Point 2, Buchannan, N.Y.

Type of Licensee: PWR B&W (615 MWt)

Type of Inspection: Special, Announced

Dates of Inspection: 4/29, 30 - 5/1, 2, 1975

Dates of Previous Inspection: 4/8-9/75

Reporting Inspector: [signature] (for) 5-22-75
G. Napuda, Reactor Inspector DATE

Accompanying Inspectors: None DATE

DATE

DATE

Other Accompanying Personnel: ~~None~~ DATE

Reviewed By: [signature] (for) 5-22-75
R. Haynes, Senior Reactor Inspector DATE

SUMMARY OF FINDINGS

Enforcement Action

A. Items of Noncompliance

None

B. Deviations

None

Licensee Action on Previously Identified Enforcement Items

Not Applicable

Design Changes

None Identified

Unusual Occurrences

None Identified

Other Significant Findings

A. Current Findings

1. Acceptable Areas

a. Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals

A visual examination of the fire barrier and compartment seal installations and fire retardant coating applications was performed by the inspector.

There is correlation between the As-Built Status and the documented requirements. (Details, Paragraph 3.)

b. Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

An examination was made of the maintenance and modification procedures for the installation of fire barriers and compartment boundary seals, and the application of fire-retardant coating for safety related cables. Present procedures appear adequate to control maintenance or modification to fire barriers. (Details, Paragraph 4.)

B. Status of Previously Reported Unresolved Items

Not Inspected

Management Interview

At the conclusion of the inspection, the inspector held a meeting at the site with the following personnel to discuss the inspection findings:

Consolidated Edison Company

Mr. M. B. Byster, QA Engineer
Mr. P. M. Duggan, Electrical Engineer
Mr. J. M. Makepeace, Technical Operations Director
Mr. S. G. Salay, Station Manager
Mr. R. A. Saya, Division Engineer

The following items were discussed and the inspector's findings were acknowledged by the licensee:

A. Purpose of Inspection

The inspector stated that the purpose of this special, announced inspection was to examine the documented facility requirements for fire stops on safety-related cables and penetration seals, to visually inspect these items for conformance with the requirements, to examine the licensee's provisions for invoking the requirments during maintenance and modification work and to determine the status of the licensee's efforts with respect to the actions listed in IE Bulletins 75-04 and 75-04A.

B. Current Findings: Acceptable Areas

The inspector stated that his review of the following areas revealed acceptable findings:

1. Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals

   A visual examination was performed of the installation of fire barriers and compartment boundary seals, and the application of fire retardant coating, for safety related cables. There is correlation between this construction and the facility's documented requirements. (Details, Paragraph 3.)

2. Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

   An examination was made of the maintenance and modification procedures for the installation of fire barriers and compartment seals, and the application of fire-retardant coating, for safety related cables. Present procedures appear adequate to control maintenance or modification to fire barriers. (Details, Paragraph 4.)

C. Status of Licensee's Efforts re IE Bulletins 75-04 and 75-04A

The licensee provided the inspector with a status report on his efforts in complying with the requirements of IE Bulletins Nos. 75-04 and 75-04A. (Details, Paragraph 5.)

DETAILS

1. Persons Contacted

Consolidated Edison Company

Mr. O. Buesse, Electrical Construction Superintendent
Mr. P. M. Duggan, Electrical Engineer
Mr. J. M. Makepeace, Technical Operations Director
Mr. T. McKernan, Electrical Engineer
Mr. R. A. Saya, Division Enginner

2. General

a. Plant Status

The plant was operating during the inspection.

b. Purpose of Inspection

The purpose of this inspection was to examine the documented facility requirements for fire stops on safety-related cables and penetration seals, to visually inspect these items for conformance with the requirements, to examine the licensee's provisions for invoking the requirements during maintenance and modification work and to determine the status of the licensee's efforts with respect to the actions listed in IE Bulletins 75-04 and 75-04A.

3. Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals

a. Requirements

The inspector reviewed the licensee's Final Safety Analysis Report. In response to NRC Question 7.6.d, page Q 7.6.(d) - 1, which asks, in part: "Please discuss your criteria with respect to fire stops.... during design and installation," the licensee stated: "Firestops are provided where cable trays pass through walls and floors, and enter switchgear or other equipment. Three types of firestops are used according to the function of the cable in the tray (control, power, etc.) and ventilation requirements of the areas involved. The first type of firestop is used in trays containing control cables passing through walls, floors, or into equipment where an air seal is not required. It is composed to two aluminasilica ceramic fiber

blankets, 36 inches long, laid in the tray and compressed around the cables using a cable tray cover. An ignited cable is extinguished by this firestop because the ceramic fiber blanket cuts off the oxygen supply. The blanket has a low thermal conductivity and can be used at temperatures up to 2300°F, without showing any physical change. Even beyond that temperature, it still retains its fire preventive characteristics.

"Because of its low thermal conductivity and the fact that it covers three feet of cable surface area, this blanket cannot be used with power cables, which dissipate considerable amounts of heat. In addition, it cannot easily be installed in control trays, where an air seal of the wall or floor opening is required for ventilation purposes. The firestop used for these configurations consist basically of (1) a transite sheet to substantially close the opening, (2) Flamemastic 71A Mastic sprayed on the cables 6" on either side of this sheet, and (3) Flamemastic 71A Mastic trowelled into the cable tray on top of the cables to seal any remaining air passage between rooms. Flamemastic 71A has recently been accepted and used by a number of utilities for this purpose. It is non-toxic, not damaging to cable insulation, and requires no derating of cables when applied over a one-foot section. Tests by various power companies and cable manufacturers have shown that a 1/16" coating of Flamemastic 71A will not burn through after 15 minutes exposure to a propane torch at 2050°F.

"The third type of firestop is used only for openings in the floor where control or power cables enter switchgear, motor control centers, supervisory cabinets, or other equipment from the tray below. This configuration combines packed fiberglass with 1/4" coating of Flamemastic 71A sprayed on either side of the closure. It provides both protection and separation of cables as they pass through the floor. This type of fire stop is used where control cables enter the panel in the control room."

The inspector requested all construction specifications and other applicable documents related to the installation of fire barriers and penetration seals. Specification "Indian Point No. 2 - Reactor Protection and Engineered Safety Feature Installation Criteria," dated 11/18/69 and Print No. 9321-F-3107-1 were provided to the inspector for his review.

The specification and print requirements complied with the FSAR commitments. In certain instances, the specification requirements exceeded FSAR commitments: (1) Troughs entering equipment cubicles from the top and conduits entering cubicles form the bottom should be packed with fiberglass from the topside after the cable is pulled; and (2) only cable jacketed in fire-retardant insulation shall be procured for facility use.

The licensee identified all penetrations and electrical equipment on prints 9321-F-2503-9, 2510-16, 3052-16, 3059-11, 3060-18, 3063-18, 3081-19, 3089-28, 3107-4, 7054-12 and H-2250. These were reviewed and utilized by the inspector for his observations.

b. Observations

(1) Primary Auxiliary Building

The cable and conduit floor penetrations in the Motor-Control-Center cabinets were packed with fiberglass and were sealed with Flamemastic, as required.

Other penetrations in the building were Flamemastic sealed and appeared to meet the transite sheet or fiberglass packing requirements, as applicable.

The splice boxes were Flamemastic sealed, where required.

Conduit passing through openings in walls or floor generally did not have the air spaces packed with blocking or sealing material. The licensee stated that a determination had been made that this was not necessary and was therefore, not made a requirement. This condition was common throughout the facility.

(2) Control Building

All floor penetrations entering equipment in the Control Room were sealed with Flamemastic, and sufficient evidence of fiberglass existed so that a determination could be made that packing had been accomplished per requirements.

Other penetrations in the building were sealed with Flamemastic and appeared to meet the transite sheet or fiberglass packing requirements.

Cables from trays entered equipment cubicles, sucha as the 480 V. Switchgear, through a connecting trough or conduit.

All bottom entry conduits were packed with fiberglass and sufficient evidence existed to ascertain that this was also accomplished for top entry troughs.

(3) Diesel-Generator Room

Conduits are used exclusively within this room. The penetrations to the electrical tunnel, originally constructed for Unit #1, are not required to have fiberglass packing or sealing.

(4) Electrical Tunnel

Most of the cables are contained within open trays; nuclear instrumentation cable is enclosed in conduit. Where these trays and conduit penetrate walls, there is a transite sheet and Flamemastic seal. The cable that enters the Diesel-Generator Room is enclosed in a conduit.

In addition to a water-deluge system, this area is provided with ionization and smoke-detector systems.

(5) General

Extensive use of asbestos wrapping on cables within cubicles, as required by the specification, was noted. Flamemastic has been applied to both sides of penetrations; the FSAR commitment was for such application on only one side.

The inspector reviewed purchase order/requisition numbers 05952, 05971, NP-36189, 6035, and invoice numbers 7029, 7083, 7145, 7462, and 7481. The required fire-barrier material was purchased and delivered to the site during the construction period. Pages one through five of "Tracer Cable-Redundant System" check-sheets were reviewed by the inspector. This record indicated that spot inspections were performed to ascertain that a complete routing was to design requirements.

In the areas examined, the inspector noted that all non-safety related cables were protected with fire barriers in a fashion similar to that utilized for safety-related cables.

4. Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

The inspector reviewed Station Administrative Order No. 104 - "Maintenance Work Request (MWR) Procedure," and No. 127 - "Modifications to Indian Point Facilities." They require work instructions and provide control for maintenance and modification activities.

An instance of transite-barrier replacement occurred prior to the specific requirements established by these procedures. The activity was controlled under a maintenance work request procedure and documented on MWR #5N0485. The licensee stated construction specifications and prints were utilized as work instructions.

5. Status of Licensee's Efforts re IE Bulletins 75-04 and 75-04A

The inspector requested a status report from the licensee regarding IE Bulletins 75-04 and 75-04A. The licensee provided the inspector with copies of two letters from William J. Cahill, Jr., (Consolidated Edison Company) to J. P. O'Reilly (U.S.N.R.C.) dated April 10 and 23, 1975 which indicate that their efforts are expected to be completed by 6/1/75.

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U. S. NUCLEAR REGULATORY COMMISSION

OFFICE OF INSPECTION AND ENFORCEMENT

REGION I

IE Inspection Report No: 75-11 Docket No: 50-293

Licensee: Boston Edison Company License No: DPR-35

800 Boylston Street Priority: -

Boston, Massachusetts 02199 Category: C

Safeguards Group: -

Location: Pilgrim Nuclear Power Station (PNS), Unit 1

Type of Licensee: BWR, 678 MWe

Type of Inspection: Special, Announced

Dates of Inspection: April 29-May 1, 1975

Dates of Previous Inspection: April 16-17, 1975

Reporting Inspector: D. M. Sternberg, Reactor Inspector 5/12/75 DATE

Accompanying Inspectors: D. L. Caphton, Senior Reactor Inspector 5/13/75 DATE

DATE

DATE

Other Accompanying Personnel: None

DATE

Reviewed By: W. H. Baumann for D. L. C. 5/13/75 DATE

D. L. Caphton, Senior Reactor Inspector

SUMMARY OF FINDINGS

Enforcement Action

A. Items of Noncompliance

None

B. Deviations

None

Licensee Action on Previously Identified Enforcement Items

Not Applicable

Design Changes

None Identified

Unusual Occurrences

None Identified

Other Significant Findings

A. Current Findings

1. Acceptable Areas

a. Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals

A visual examination was performed of the installation of fire barriers and compartment boundary seals, and the application of fire-retardant coating, for safety related cables. There is correlation between this construction and the facility's documented requirements. (Details, Paragraph 3)

b. Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

An examination was made of the maintenance and modification procedures for the installation of fire barriers and compartment boundary seals, and the application of fire-retardant coating, for safety related cables. There is correlation

between these procedures and the facility's documented requirements. (Details, Paragraph 4)

2. Items Requiring Follow-up

a. Lack of Correlation Between the Facility's Requirements and As Built Status

During the visual examination described in paragraph 1a, a lack of correlation was found between the construction and the facility's documented requirements. (Details, Paragraph 5)

B. Status of Previously Reported Unresolved Items

Not Inspected

Management Interview

At the conclusion of the inspection, the inspector held a meeting at the site with the following personnel to discuss the inspection findings.

G. Baston, Pilgrim Division Head
J. Smith, Pilgrim Division Head (as of May 1, 1975)
A. Morisi, Senior Electrical Engineer
S. Martin, Process Engineer

The following items were discussed, and the inspector's findings were acknowledged by the licensee.

A. Purpose of the Inspection

The purpose of this inspection was to examine the documented facility requirements for fire stops on safety-related cables and penetration seals, to visually inspect these items for conformance with the requirements, to examine the licensee's provisions for invoking the requirements during maintenance and modification work and to determine the status of the licensee's efforts with respect to the actions listed in IE Bulletins 75-04 and 75-04A.

B. Current Findings: Acceptable Areas

The inspector stated that his review of the following areas revealed acceptable findings:

1. Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals

A visual examination was performed of the installation of fire barriers and compartment boundary seals, and the application of fire-retardant coating, for safety related cables. There is correlation between this construction and the facility's documented requirements. (Details, Paragraph 3)

2. Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

An examination was made of the maintenance and modification procedures for the installation of fire barriers and compartment boundary seals, and the application of fire-retardant coating, for safety related cables. There is correlation between these procedures and the facility's documented requirements. (Details, Paragraph 4)

C. Items Requiring Follow-up

The inspector stated that the following items were observed and are considered to be unresolved:

1. Lack of Correlation Between the Facility's Requirements and As-Built Status

During the visual examination described in paragraph B1, a lack of correlation was found between the construction and the facility's documented requirements in one area. (Details, Paragraph 5)

D. Status of Licensee's Efforts on IE Bulletins 75-04 and 75-04A

The licensee provided the inspector with a status report on his efforts in complying with the requirements of IE Bulletin Nos. 75-04 and 75-04A. (Details, Paragraph 6)

E. Report by State of Kentucky Relating to Pilgrim Shipping Cask Sent for Disposal Containing Excessive Water

The inspector discussed this item with the licensee and observed a typical cask and the sealing and preparation for shipment. (Details, Paragraph 7)

F. Change of the Pilgrim Division Head

The licensee reported a change in the Division Head had taken place. (Details, Paragraph 8)

G. Iodine Release Rate Information Report

The licensee stated he was preparing an information report pertaining to the recent Iodine release rate situation. (Details, Paragraph 9)

DETAILS

1. Persons Contacted

G. Baston, Pilgrim Division Head
J. Smith, Pilgrim Division Head (as of May 1, 1975)
S. Martin, Process Engineer
J. Lucero, Health Physics Engineer
J. Seery, Chief Technical Engineer
D. Clark, Plant Engineer
J. Nicholson, Chief Maintenance Engineer
W. Roche, Nuclear Operations Manager
V. Stagliola, Radwaste Engineer
A. Morisi, Senior Electrical Engineer
R. Kennedy, QA Administrative Assistant
J. Sullivan, Electrical Engineer

2. General

a. Plant Status

During the inspection, the facility was in the process of returning power following a short maintenance outage.

b. Purpose of Inspection

The purpose of this inspection was to examine the documented facility requirements for fire stops on safety-related cables and penetration seals, to visually inspect these items for conformance with the requirements, to examine the licensee's provisions for invoking the requirements during maintenance and modification work and to determine the status of the licensee's efforts with respect to the actions listed in IE Bulletins 75-04 and 75-04A.

3. Correlation between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals

a. Requirements

(1) The plant was built in accordance with Drawing E-347, "Conduit and Cable Tray Notes, Symbols, and Details." Revision 36 was used as the basis for this inspection.

(2) The basic requirements pertaining to penetration sealing are presented below along with paragraph number reference to the specific (and detailed) requirements.

(a) All cable openings in walls and floors shall have fire stops installed. (Paragraph 12)

(b) The inside of all block-out openings down to the conduits, conduit sleeves and tray enclosures shall be completely filled with solid concrete matching the thickness of the floor and as a minimum 6" in walls. (Paragraph 12A & 12B)

(c) Conduit sleeves (Vertical Penetration)
(I) Base of Kaowool or non-burning Minitfoam.
(II) 4-6 inches of foam on the base.
(III) minimum 1 inch of non-shrink pourable grout (Paragraph 12A1)

(d) Cable Trays (Vertical Penetration)
(I) Packing, foaming and grouting requirements similar to (c) above. (Paragraph 12A2)

(e) Conduit sleeve (Horizontal Penetrations)
(I) A minimum of 6 inches of foam in the center of the wall thickness.
II At least six inches of air space on each side of the penetration.
III Kaowool optional on one side to ensure minimum of six inch air space.
IV If less than 6 inches results, use 1/8 inche layer of Flamemastic 71A. (Paragraph 12B1).

(f) Cable Trays
(I) The foaming requirement and packing options are similar to those in (e) above. (Paragraph 12B2)

b. <u>Observations</u>

(1) All accessible penetrations were inspected. Except as noted in paragraph 5, no problems were identified.

(2) The following represents a summary of the areas and penetrations inspected.

Bldg.	Elevation	Room	Wall, Floor or Ceiling	No. of Penetration
RB	51	East Wall	F&W	80
RB	51	South Wall	F&W	66
RB	51	West Wall	F&W	50
RB	51	Recirc MG	F&W	105*
RB	74	#4 Fan Room	F	16
RB	74	#3 Fan Room	F	8
RB	74	East Wall	F&W	20
RB	74	North Wall	F&W	4
RB	74	South Wall	F	41
RB	91	East Wall	F	16
RB	91	#6 Fan Room	F&W	26
RB	91	North Wall	F	4
RB	91	South Wall	F&W	22
RB	117	East Wall	F	38
RB	117	Spent Fuel Pool	F	12
RB	117	West Wall	F	28
RB	117	South Wall	F	44
RB	23	East Wall	F	124
RB	23	North Wall	F&W	2
RB	23	West Wall	F&W	69
RB	23	South Wall	F&W	16
RB	-	RHR Quad. A	F&W&C	100*
RB	-	CRD Quad.	F&W&C	50*
RB	-	RHR Quad. B	F&W&C	50*
RB	-	RCIC Quad.	F&W&C	65*
Intake Struc	-	all	F&W&C	160
RB	-	Diesel Gen. A	F&W&C	34**
RB	-	Diesel Gen. B	F&W&C	56**
RB	-	Make up Demin	F&W	80
Turbine Bldg.	-	House Boiler	F&W	44
" "	51	SBGT Room	F&W&C	20
" "	-	Radwaste Area	F&W	150
" "	-	Turbine Deck	F&W	50
RB	-	Control Room	F	250
RB	-	Cable Spreading Rm	F&W&C	280*

*Areas so marked contained some penetrations with poor accessibility but no problems were obvious.

**Certain penetrations in these areas appear to have a silicone (RTV) type material used for sealant. (See Paragraph 5 for discussion)

4. Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

a. Discussions with the Chief Maintenance Engineer indicate that all maintenance work is accomplished in accordance with the requirements of the E-347 drawing with the objective being to maintain the plant as it was built.

b. Discussion with the Senior Electrical Engineer responsible for the High Energy Pipe Break cable modification also indicate that the E-347 drawing was used as the basis for the statement of work to the contractor performing the work. He stated that work is being accomplished in accordance with this drawing.

5. Items Requiring Follow-up

This section of the report documents and serializes matters of inspector's concern which will be investigated by the licensee and inspected and closed out in a subsequent inspection.

75-11-1 Drawing E-347, Paragraph 12.A.(1)(b) and 12.B.(1)(a) require the use of "rigid closed cell type urethane foam with "non-burning" flame characteristics as defined in ASTM Designation D1692-59T (Minit-Foam by Kerr Chemical or approved equal)." A review of purchase orders in 1971 and 1972 indicate a "Self-extinguishing type of foam was procurred. The licensee stated he will identify the type of foam used and its adequacy and compliance with the ASTM standard and review the E-347 drawing in use during 1971 and 1972 to determine if "Self-extinguishing foam" was called for.

75-11-2 The inspector noted that certain penetrations in the Recirc MG room and the Diesel Generator rooms were sealed with a silicone material. The licensee stated he will review the use and adequacy of this material.

75-11-3 The inspector identified 4 penetrations in the Reactor Building which are part of the High Energy Pipe Break modification which are not yet sealed with cement. The licensee stated work is in progress to have this work finished and that it should be finished by about May 17, 1975.

6. Status of Licensee's Efforts reference IE Bulletins 75-04 and 75-04A

The inspector was provided with a copy of the response letter to Bulletin 75-04A. This contained a schedule for accomplishment of the required action and the licensee stated this action is is progress and the dates indicated will be met. All required action will be completed by June 25, 1975.

7. Report by State of Kentucky Relating to Pilgrim Shipping Cask Sent for Disposal Containing Excessive Water

The inspector received word on site that a cask containing spent Diatomaceous Earth (DE) was received for disposal by a site in Kentucky with excessive water. The inspector examined a similar cask and the lid used to seal the cask. He also discussed with the licensee the procedures used in the filling and verification that the cask is dry prior to shipment. The licensee stated that the material shipped is essentially dry and he cannot understand the source of water found in the cask. He plans to investigate this matter and review the procedures used in shipments of this nature to preclude the possibility of a similar event. The inspector stated an inspection of the circumstances surrounding this event would be conducted in the near future.

8. Change of Pilgrim Division Head

On May 1, 1975 Mr. James A. Smith replaced Mr. Grant Baston as Pilgrim Division Head. The inspector met Mr. Smith and discussed the current inspection program and was informed that an orderly transition period was expected.

9. Iodine Release Rate Information Report

The licensee informed the inspector that high Iodine release rates were being experienced from the Reactor Building vent. He stated that different measures were being taken to correct this situation and although no Abnormal Occurrences had taken place an Information Report detailing the recent events and the current and planned corrective actions would be made to the NRC by May 2, 1975. The inspector acknowledged this.

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U. S. NUCLEAR REGULATORY COMMISSION

OFFICE OF INSPECTION AND ENFORCEMENT

REGION I

IE Inspection Report No: 50-271/75-03

Docket No: 50-271

Licensee: Vermont Yankee Nuclear Power Corporation
20 Turnpike Road
Westborough, Massachusetts 01581

License No: DPR-28

Priority: -

Category: C

Safeguards Group: -

Location: Vernon, Vermont

Type of Licensee: BWR (1593 Mw Th)

Type of Inspection: Special, announced

Dates of Inspection: May 6 & 7, 1975

Dates of Previous Inspection: 2/26 - 28/75

Reporting Inspector: L. W. Gage, Reactor Inspector — 5-19-75 DATE

Accompanying Inspectors: None — DATE

DATE

DATE

Other Accompanying Personnel: None — DATE

Reviewed By: R. C. Haynes, Senior Reactor Inspector — 5/20/75 DATE

SUMMARY OF FINDINGS

Enforcement Action

A. Items of Noncompliance

None

B. Deviations

None

Licensee Action on Previously Identified Enforcement Items

Not applicable

Design Changes

None identified

Unusual Occurrences

None identified

Other Significant Findings

A. Current Findings

1. Acceptable Areas

a. Correlation Between the Facility's As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals.

A visual examination was performed of the installation of fire barriers and compartment boundary seals, and the application of fire-retardant coating, for safety related cables. There is correlation between this construction and the facility's documented requirements. (Details, Paragraph 3.)

2. Unresolved Items

a. Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

During the examination described in paragraph A.1.a, a lack of documented coverage was ascertained for maintenance and modification procedures for fire stops on electrical safety-related cables and penetration seals. (Details, Paragraph 4.)

B. Status of Previously Reported Unresolved Items

Not inspected

Management Interview

At the conclusion of the inspection, the inspector held a meeting at the site with the following personnel to discuss the inspection findings:

Vermont Yankee Nuclear Power Corporation

Mr. George Thomas, Assistant Plant Superintendent
Mr. Warren Murphy, Engineering Support Supervisor

The following items were discussed, and the inspector's findings were acknowledged by the licensee:

A. Purpose of the Inspection

The inspector stated that the purpose of this special, announced inspection was to examine the documented facility requirements for fire stops on safety-related cables and penetration seals, to visually inspect these items for conformance with the requirements, to examine the licensee's provisions for invoking the requirements during maintenance and modification work and to determine the status of the licensee's efforts with respect to the actions listed in IE Bulletins 75-04 and 75-04A.

B. Current Findings: Acceptable Areas

The inspector stated that his review of the following area revealed acceptable findings:

Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals.

A visual examination was performed of the installation of fire barriers and compartment boundary seals, and the application of fire-retardant coating, for safety-related cables. There is correlation between this construction and the facility's documented requirements. (Details, Paragraph 3.)

C. Unresolved Items

The inspector stated that the following item was observed and is is considered to be unresolved:

Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

During the examination described in paragraph B, a lack of documented coverage was ascertained for maintenance and modification procedures for fire stops on electrical safety-related cables and penetration seals. (Details, Paragraph 4.)

D. Status of Licensee's Efforts re IE Bulletins 75-04 and 75-04A

The licensee provided the inspector with a status report on his efforts in complying with the requirements of IE Bulletins Nos. 75-04 and 75-04A. (Details, Paragraph 5.)

DETAILS

1. Persons Contacted

Vermont Yankee Nuclear Power Corporation

Mr. Warren Murphy, Engineering Support Supervisor
Mr. William Wittmer, Technical Assistant

2. General

a. Plant Status

The plant was operating during the inspection.

b. Purpose of Inspection

The purpose of this inspection was to examine the documented facility requirements for fire stops on safety-related cables and penetration seals, to visually inspect these items for conformance with the requirements, to examine the licensee's provisions for invoking the requirements during maintenance and modification work and to determine the status of the licensee's efforts with respect to the actions listed in IE Bulletins 75-04 and 75-04A.

3. Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals

a. Requirements

The inspector reviewed the licensee's Final Safety Analysis Report. On response to this NRC question (Number 7.5 on page I.2-50, dated 10/23/70): "Submit the cable installation design criteria...The discussion of cable installation criteria should include: .... Criteria with respect to fire stops...," the licensee stated:

"Fire stops are provided in vertical tray runs at floor lines or at 10 - foot intervals, whichever is less."

The inspector requested all construction specific actions and other applicable documentation related to facility requirements for fire stops on safety-related cables and penetration seals. The licensee provided a procedure, titled, "Ebasco Services Incorporated, Vermont Yankee Nuclear Power Station, Cable Pulling, Terminating, Cable Tray, Conduit and Marking System Procedure," dated 11/9/71. This procedure states, in a paragraph titled "Fire Barriers:"

"Fire barriers are to be installed whenever a tray penetrates a floor or wall. The fire barrier shall extend along the cable tray for a minimum distance of 4 inches.

"All cable trays entering the cable spread room shall have fire barriers extending from the wall for a minimum distance of three feet.

"Fire barriers are to be installed at all the control room floor penetrations. (To act as a seal against ingress of CO_2 from the cable vault fire protection system.)

"In all vertical tray runs fire barriers shall be installed at reasonable intervals, say at 10 ft. spacing.

"The fire barriers should be formed from "FLAMEMASTIC 71A" applied over fiberglass wadding. Application can be made either by spraying or spreading with a trowel depending upon the location.

" "FLAMEMASTIC 71A" is manufactured by the Dyna-Therm Corporation."

The licensee stated that this procedure was the only documentation at the site related to facility requirements for fire stops on safety-related cables and penetration seals.

b. Observations

The inspector visually inspected all safety-related cable penetrations, except those which could not be examined without (1) interfering with the operation of the facility, or (2) removing material and equipment previously installed. Floors, walls, and ceilings were examined in the following areas: control room, cable vault, high-voltage switchgear room, reactor building (at elevations 345', 318', 303', 280', 252', and 213'), turbine building (operating floor, ground floor, and basement), and pump house.

The inspector found fire barriers installed wherever safety-related cabling penetrated floors, walls, and ceilings. In the vast majority of instances, the fire barrier was as described in the licensee's procedure: Flamemastic 71A applied over fiberglass wadding.

In a minority of instances, the inspector found that the licensee used Crouse-Hinds Company's "Chico A5" sealing compound. The catalog specification for this compound states that it is "... a seal which withstands pressure several times greater than the explosion pressures met in conduit systems, stops the passage of flames, and prevents leakage of unexploded gas from hazardous to non-hazardous areas."

In a few instances, the inspector found that the licensee used Flamemastic 71A applied over grout.

The cable trays in the cable vault are covered, top and bottom, with sheet-metal plates. The cable vault also has a CO_2 fire-suppression system. Windows from the computer room, which are normally open and vent into the cable vault, are designed to automatically close when the CO_2 system is operated.

When covered cable trays pass through walls or floors, the fire barriers are normally inside the cable trays. Evidence that these barriers exist can usually be determined by looking through louvers in the cable-tray covers or (where practical) by lifting the covers.

The inspector found three instances where the licensee had performed some maintenance or modifications, disturbed the fire barrier, and had not repaired it:

(1) The base of a cabinet in the control room, located near the south wall, between columns 13 and 12.

(2) A floor penetration in the cable vault, located near the north wall, near a reactor protection motor.

(3) A wall penetration in the reactor building, seen from the catwalk above the 213' elevation, penetrating the residual-heat-removal exchanger room at approximately 60° on the floor plan.

The licensee stated that all of the distrubed fire barriers would be repaired.

4. Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

The inspector determined that, other than the Ebasco construction procedure described in Details, paragraph 3.a., the licensee did not have any maintenance or modification procedures for fire stops on electrical safety-related cables and penetration seals. The inspector further determined that this Ebasco procedure was not designed to insure satisfactory tracking and close-out of penetration modifications such as the three instances described in Details, paragraph 3.b.

The licensee stated that he was presently involved in a program to review methods and materials for cable-penetration sealing, and expected to complete this review by May 15, 1975. He further stated that all future penetration repairs and modifications would be handled in accordance with the procedure used to carry out design changes ("Design Changes Review and Approval," No. A.P. 032, Rev. 3, presently being revised); following this procedure would insure satisfactory tracking and close-out of penetration modifications.

This item is considered to be unresolved, pending review by an NRC inspector of the program developed by the licensee for cable-penetration sealing and of his revised design-change procedure.

5. Status of Licensee's Efforts re IE Bulletins 75-04 and 75-04A

The inspector requested a status report from the licensee regarding IE Bulletins 75-04 and 75-04A. The licensee provided the inspector with a copy of a letter, No. WVY 75-43, dated April 24, 1975, from J. L. French (Yankee Atomic Electric Company) to J. P. O'Reilly (U.S.N.R.C.). This letter provides a schedule for eleven different types of surveys and reviews being conducted by the licensee in response to Bulletins 75-04 and 75-04A. The first plant surveys are scheduled for completion on 5/15/74; the final plant policy review is scheduled for completion on 9/30/75.

3 Mile Island

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U. S. NUCLEAR REGULATORY COMMISSION

OFFICE OF INSPECTION AND ENFORCEMENT

REGION I

IE Inspection Report No: 50-289/75-10

Docket No: 50-289

Licensee: Metropolitan Edison Company
P. O. Box 542
Reading, Pennsylvania 19603

License No: DPR-50

Priority:

Category: C

Safeguards Group:

Location: Middletown, Pennsylvania, 3 Mile Island 1

Type of Licensee: PWR B&W (871 MWe)

Type of Inspection: Special, Announced

Dates of Inspection: May 8, 9 & 12, 1975

Dates of Previous Inspection: April 15, 1975

Reporting Inspector: [signature] 5-22-75
G. Napuda, Reactor Inspector — DATE

Accompanying Inspectors: NONE — DATE

DATE

DATE

Other Accompanying Personnel: NONE — DATE

Reviewed By: [signature] (for) 5-22-75
R. Haynes, Senior Reactor Inspector — DATE

SUMMARY OF FINDINGS

Enforcement Action

A. Items of Noncompliance

None

B. Deviations

None

Licensee Action on Previously Identified Enforcement Items

Not Applicable

Design Changes

None Identified

Unusual Occurrences

None Identified

Other Significant Findings

A. Current Findings

1. Acceptable Areas

a. Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals

A visual examination of the fire barrier and compartment seal installations and fire retardant coating applications was performed by the inspector. There is correlation between the as-built status and the documented requirements. (Details, Paragraph 3)

b. Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

The procedure that controls maintenance, modification, and repairs and a recently approved work instruction written specifically for installation and repair of fire barriers were reviewed. They appear to adequately control activities in the subject areas. (Details, Paragraph 4)

B. Status of Previously Reported Unresolved Items

Not Inspected

Management Interview

At the conclusion of the inspection, the inspector held a meeting at the site with the following personnel to discuss the inspection findings:

Metropolitan Edison Company

J. Colitz, Unit Number One Superintendent
C. E. Hartman, Electrical Engineer
J. Herbein, Station Superintendent
G. May, Senior Staff Engineer
W. E. Potts, Quality Control Supervisor

Gilbert Associates

P. Shipper, Project Electrical Engineer

The following items were discussed and the inspector's findings were acknowledged by the licensee.

A. Purpose of Inspection

The inspector stated that the purpose of this special, announced inspection was to examine the documented facility requirements for fire stops on safety-related cables and penetration seals, to visually inspect these items for conformance with the requirements, to examine the licensee's provisions for invoking the requirements during maintenance and modification work and to determine the status of the licensee's efforts with respect to the actions listed in IE Bulletins 75-04 and 75-04A.

B. Current Findings: Acceptable Areas

The inspector stated that his review of the following areas revealed acceptable findings:

1. Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals

   A visual examination was performed of the installation of fire barriers and compartment boundary seals, and the application of fire retardant coating, for safety related cables. There is correlation between this construction and the facility's documented requirements. (Details, Paragraph 3)

2. Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

   The procedure that controls maintenance, modification, and repairs and a recently approved work instruction written specifically for installation and repair of fire barriers were reviewed. They appear to adequately control activities in the subject areas. (Details, Paragraph 4)

C. Status of Licensee's Efforts re IE Bulletins 75-04 and 75-04A

The licensee provided the inspector with a status report on his efforts in complying with the requirements of IE Bulletins Nos. 75-04 and 75-04A. (Details, Paragraph 5)

DETAILS

1. Persons Contacted

Metropolitan Edison Company

C. Hartman, Lead Electrical Engineer
G. May, Senior Staff Engineer
J. Zenyuch, Student Engineering Trainee

Gilbert Associates

W. A. Brannen, Supervisory Fire and Safety Engineer
P. Shipper, Project Electrical Engineer

2. General

a. Plant Status

The plant was operating during the inspection.

b. Purpose of Inspection

The purpose of this inspection was to examine the documented facility requirements for fire stops on safety-related cables and penetration seals, to visually inspect these items for conformance with the requirements, to examine the licensee's provisions for invoking the requirements during maintenance and modification work and to determine the status of the licensee's efforts with respect to the actions listed in IE Bulletins 75-04 and 75-04A.

3. Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals

a. Requirements

The inspector reviewed the licensee's FSAR, Paragraph 8.2.2.11.b states: "Fire barriers are used at cable trays and cable runs where they enter or leave a Class I area. There will be fire barriers where the cable trays enter the control and auxiliary buildings and where vertical trays pass through floor openings".

The inspector requested all construction specifications and other applicable documentation related to facility requirements for fire barriers on safety-related cables and penetration seals. The inspector was provided with and reviewed Specification SP-5616, Revision 2 and Prints 4192-E-214-011, E-215-011, C-201-128, C-201-129, and S-201-121.

These documents describe the following types of fire barriers and where they are installed:

(1) Trays penetrating metal walls: Kaowool packed, encased in a rectangular sheet metal sleeve, with a marinite board on one side of the wall.

(2) Trays penetrating Class I building (e.g., Control Building and Intermediate Building): exterior concrete walls Kaowool packed, with metal covers bolted onto the angle iron which frames the exterior side of the penetration. Voids under the cover to be filled with Flamemastic, without intending to provide an air seal.

(3) Trays penetrating interior walls: Kaowool packed, with the packing extending six inches from both sides of the wall, supported by the tray construction.

(4) Cable penetrations in the Control Room floor, for electrical equipment cubicles: Kaowool packed, with a Marinite board on both sides of the penetration.

(5) Vertical penetrations: Kaowool packed, and the tray provided with a cover for approximately six feet above floor level.

The licensee had identified all penetrations and electrical equipment locations on Prints 4912-E-214-014, -022, -023, -024, -025, -026, -034, -036, -037, -038, -041, -042, -226 -105 and D-214-035. The inspector reviewed and utilized these for his observation.

b. Observation

(1) Auxiliary Building

The inspector found that the fire barriers conformed to specification requirements.

Where cables exited the building through sleeves, "Dux-seal" was used to seal the opening.

(The required Marinite board fire barriers between redundant channels, on elevations 281 and 295 were noted by the inspector).

(2) Control Building

The inspector discovered that the top marinite board had been omitted from the Control-Room-Cubicle floor penetrations. The licensee produced Engineering Change Memo S/N 432 which permitted the penetration to have a marinite board on only the bottom side. The installation of fire barriers appeared to be acceptable.

(The inspector noted that armored cables served the CRD trip breakers).

(3) Intermediate Building

The fire barrier installations appeared to conform to the requirements.

(The inspector observed the required Marinite board fire barriers between redundant channels, on elevation 295 and noted metal fire doors on the Emergency Diesel Pump Rooms).

(4) Screenhouse

The inspector found that the fire barriers conformed to requirements.

(5) General

The inspector noted the occassional application of Flamemastic on interior wall penetrations. The licensee stated this was done in certain cases to hold the Kaowool together and not for sealing purposes.

The inspector also noted the widespread use of Flamemastic, troweled onto penetration covers.

The inspector noted the general practice packing the penetrations, through which conduits passed, with Kaowool. Kaowool was also packed into conduits at their entry point into cubicles.

A water-deluge system is provided and protects areas including the Cooling Tower, Diesel-Generator, Oil Reservoir, Service Building, Intake Screen House, Charcoal Filter, and Health Physics areas.

The licensee stated that an automatic CO_2 fire suppression system has been designed for the cable spreading and relay areas and preparatory work is underway.

The licensee also stated that no PVC jacketed cable was used inside the facility, and produced "TMI-EK Bill of Materials" that appeared to confirm that only fire-retardant insulated cable was purchased and used.

The inspector reviewed Purchase Orders 9459-01-63618, -63830, -63850, -64900, -64932, -65251, and -65279. They confirmed that the required fire-barrier material had been purchased during construction.

The inspector noted that the non-safety related cabling appeared to be protected by similar fire stops and penetration seals.

4. <u>Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures</u>

The inspector reviewed "Station Administration Procedure 1016" which specifies that all required maintenance, modification, and repair work must first be entered on a "Work Request Form". This is reviewed by Supervision. Safety related items are identified and reviewed by whomever is necessary, including the Quality Assurance group. All work must be performed to a written work instruction and inspected by the foreman (and, when applicable, Quality Control). Work Requests Numbers 2745, 2746, 3353, 3595,

4278, 4661, 4796, 4873, and 6335 were inspected and followed the procedure.

The inspector reviewed "Work Request Procedure-Installation/Repair of cable tray and conduit Fire Barriers, 1420-FB-1" dated May, 1975. It appears to adequately control activity in the subject area.

5. Status of Licensee's Efforts re IE Bulletins 75-04 and 75-04A

The inspector requested a Status Report from the licensee regarding IE Bulletins 75-04 and 75-04A. The licensee provided the inspector with a letter dated April 28, 1975 from W. M. Creitz (Metropolitan Edison Company) to J. P. O'Reilly (U.S.N.R.C.) containing two enclosures which answered all but Item 4 of Bulletin 75-04A. A review of this item is underway by the licensee; the results will be reported to N.R.C. by May 23, 1975.

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(Jan 75) (Rev)

U. S. NUCLEAR REGULATORY COMMISSION

OFFICE OF INSPECTION AND ENFORCEMENT

REGION I

IE Inspection Report No: 50-29/75-05

Docket No: 50-29

Licensee: Yankee Atomic Electric Company
20 Turnpike Road
Westborough, Massachusetts 01581

License No: DPR-3

Priority:

Category: C

Safeguards Group:

Location: (Yankee Rowe)

Type of Licensee: PWR 175 MWe (W)

Type of Inspection: Special, Announced

Dates of Inspection: May 5, 1975

Dates of Previous Inspection: 3/11/75 - 3/13/75

Reporting Inspector: Jacque Durr, Reactor Inspector — DATE: May 11, 1975

Accompanying Inspectors: None — DATE

DATE

DATE

Other Accompanying Personnel: None — DATE

Reviewed By: R. C. Haynes, Senior Reactor Inspector — DATE: 5-19-75

SUMMARY OF FINDINGS

Enforcement Action

A. Items of Noncompliance

None

B. Deviations

None

Licensee's Action on Previously Identified Enforcement Items

Not applicable

Design Changes

None identified

Unusual Occurrences

None identified

Other Significant Findings

A. Current Findings

1. Acceptable Areas

a. Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals

A visual examination was performed of the installation of fire barriers and compartment boundary seals, and the application of fire-retardant coating for safety-related cables. There is correlation between this construction and the facility's documented requirements. (Details, Paragraph 3)

b. Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

There are no requirements for fire stops in this plant and, therefore, they are not addressed in the maintenance and modification procedures. (Details, Paragraph 4)

2. Unresolved Items

None

B. Status of Previously Reported Unresolved Items

Not inspected

Management Interview

At the conclusion of the inspection the inspector held a meeting at the site with the following personnel to discuss the inspection findings:

Yankee Atomic Electric Company

Mr. H. Autio, Plant Superintendent
Mr. W. Jones, Assistant Plant Superintendent
Mr. J. Thayer, Assistant Engineer
Mr. P. Laird, Maintenance Supervisor

The following items were discussed and the inspector's findings were acknowledged by the licensee.

A. Purpose of the Inspection

The inspector stated that the purpose of this special, announced inspection was to examine the documented facility requirements for fire stops on safety-related cables and penetration seals, to visually inspect these items for conformance with the requirements, to examine the licensee's provisions for invoking the requirements during maintenance and modification work and to determine the status of the licensee's efforts with respect to the actions listed in IE Bulletins 75-04 and 75-04A. (Details, Paragraph 2.b)

B. Current Findings: Acceptable Areas

The inspector stated that his review of the following areas revealed acceptable areas:

1. Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals

   The inspector performed a visual examination of all safety-related cable tray penetrations within the scope of the inspection and found the flame barrier requirements were met. (Details, Paragraph 3)

2. Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

   The inspector stated that fire stops are not addressed in maintenance and modification procedures. However, there are no requirements for them. (Details, Paragraph 4)

3. Status of Licensee's Efforts re Bulletins 75-04 and 75-04A

   The licensee provided the inspector with a status report of his efforts to comply with IE Bulletins 75-04 and 75-04A. (Details, Paragraph 5)

DETAILS

1. Persons Contacted

Yankee Atomic Electric Company

Mr. H. Autio, Plant Superintendent
Mr. W. Jones, Assistant Plant Superintendent
Mr. J. Thayer, Assistant Engineer
Mr. P. Laird, Maintenance Supervisor

2. General

a. Plant Status

The plant was operating during the inspection.

b. Purpose of Inspection

The purpose of this inspection was to examine the documented facility requirements for fire stops on safety-related cables and penetration seals, to visually inspect these items for conformance with the requirements, to examine the licensee's provisions for invoking the requirements during maintenance and modification work and to determine the status of the licensee's efforts with respect to the actions listed in IE Bulletins 75-04 and 75-04A.

3. Correlation Between the Facility's Requirements and As-Built Status for Fire Stops on Electrical Safety-Related Cables and Penetration Seals

a. Requirements

The information for the installation of cable trays is found on the plant drawings. An example of this can be found on plant drawing number 9699-FE-36G-7 which has details of specific penetration construction.

The normal penetration is depicted as going from cable trays into conduit sleeves through floors and walls.

There are no requirements for flame barriers or fire retardant coatings on the drawings or in the FSAR.

b. Observations

The inspector examined the following areas with the results indicated:

(1) Control Room

(a) Main Console

The cables pass through slots cut in the floor. All penetrations were sealed with duct seal from above and a fiber-glass type insulation from below.

(b) Safety Injection Cabinet

The penetrations are conduit sleeves through the floor. All penetrations were sealed with a fiber-glass type of insulation.

(c) Control Room Walls

Several cable trays pass through the floor against the walls. The fit up between the cable trays and floor was very close. The front side of the trays were covered with sheet metal while the backside (approximately 3 inches from the wall) was open. The inspector could not ascertain if flame barrier material was installed. The licensee stated that flame barrier material was installed.

The inspector took a small sample of the fiber-glass type insulation and applied a flame to it. It would not burn.

(2) Switch Gear Room

This room is directly below the main control room and all wall penetrations are either conduit or cable tray to conduit sleeves. Cable tray penetrations through the ceiling are closed with Masonite Board and duct seal compound.

(3) Cable Tray House

This room is directly above the control room and most cabling-to-primary-containment penetrations pass through

here. All cabling comes up through the floor through conduit sleeves. There is no insulation material packed in these sleeves.

The reactor coolant pump leads are asbestos-cloth wrapped for additional protection.

(4) Primary Auxiliary Building

All areas had the cabling enclosed in conduit except for several runs of mineral insulation cable in cable trays.

(5) Safety Injection Building

All areas had the cabling enclosed in conduit. However, there is an area, "Manhole #3", which is all safety injection cabling that transitions from underground conduits to short sections of unprotected cables and then back to conduits.

(6) Emergency Diesel - Generators Nos. 1, 2, and 3

All cabling is enclosed in conduit. Each diesel-generator is in a separate room with interconnecting fire doors.

(7) Screen House

All cabling is enclosed in conduit.

(8) Additional Features - Smoke Detection System

A smoke detection system has been installed in the following critical areas:

(a) Cable Tray House
(b) Main Control Console
(c) Switch Gear Room
(d) Control Room Ceiling
(e) Safety Injection Building
(f) Vault (documentation)

4. Invokement of Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification Procedures

The inspector determined that the licensee did not have any maintenance or modification procedures for fire stops on electrical safety-related

cables and penetration seals. The inspector further determined that there were no requirements for fire stops in the plant specifications, drawings and FSAR.

5. Status of Licensee's Efforts re IE Bulletins 75-04 and 75-04A

The inspector requested a status report from the licensee regarding IE Bulletins 75-04 and 75-04A. The licensee stated that a survey of the requirements of Bulletins 75-04 and 75-04A relative to the plant has been made and an evaluation is in progress. (The licensee has mailed the NRC a letter, No. WYR 75-47, dated April 24, 1975, from J. L. French (Yankee Atomic Electric Company) to J. P. O'Reilly (U.S.N.R.C.). This letter provides a schedule for eleven different types of surveys and reviews being conducted by the licensee in response to Bulletins 75-04 and 75-04A. The first plant surveys are scheduled for completion on 5/15/75; the final plant policy review is scheduled for completion on 9/30/75.)

Ft Calhoun

1. Smith

Copy to TAB 6/10/75

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
REGION IV
611 RYAN PLAZA DRIVE, SUITE 1000
ARLINGTON, TEXAS 76012

May 21, 1975

Omaha Public Power District
ATTN: Mr. T. E. Short
Division Manager - Production Operations
1623 Harney Street
Omaha, Nebraska 68102

Docket No. 50-285

Gentlemen:

This letter refers to the inspection of your activities at Fort Calhoun Station, Unit No. 1, authorized under NRC Facility License ~~No. DPR-40,~~ conducted by Messrs. Dickerson and Smith of the Office of Inspection and Enforcement on May 7-9, 1975. It also refers to the discussion of our inspection findings held by the inspectors with Mr T. E. Short and others of your staff at the conclusion of the inspection on May 9, 1975.

Within the scope of this inspection, no inconsistencies with NRC requirements were identified. Other infractions identified through your internal audit program and which were corrected by OPPD are discussed in the Summary of Findings section of the enclosed inspection report. No additional information is needed for these items at this time.

During this inspection we also examined your corrective action relative to items of nonconformance as reported in IE Inspection Report Nos. 50-285/75-01 and 50-285/75-03. We have no further question relative to these items.

In accordance with Section 2.790 of the NRC's "Rules of Practice", Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosed inspection report will be placed in NRC's Public Document Room. If this report contains any information that you believe to be proprietary, it is necessary that you make a written application within 20 days to this office to withhold such information from public disclosure. Any such

application must include a full statement of the reasons it is claimed that the information is proprietary. It should be prepared so that proprietary information identified is contained in a separate part of the document, since the application, excluding this separate part, will also be placed in the Public Document Room. If we do not hear from you in this regard within the specified period, the report will be placed in the Public Document Room.

Should you have any qustions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

G. L. Madsen

G. L. Madsen, Chief,
Reactor Construction and
Operations Branch

Enclosure:
IE Inspection Report No. 50-285/75-06

Turkey Point 3 & 4

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
230 PEACHTREE STREET, N. W. SUITE 818
ATLANTA, GEORGIA 30303

In Reply Refer To:
RE:II:AKH
50-250/75-7
50-251/75-7

MAY 29 1975

Florida Power and Light Company
Attn: Dr. R. E. Uhrig, Vice President
of Nuclear Affairs
P. O. Box 013100
Miami, Florida 33101

Gentlemen:

This refers to the inspection conducted by Mr. A. K. Hardin of this office on May 12-14, 1975, of activities authorized by NRC Operating License Nos. DPR-31 and DPR-41, for the Turkey Point 3 and 4 facilities, and to the discussion of our findings held with Mr. Yaeger at the conclusion of the inspection.

Areas examined during the inspection and our findings are discussed in the enclosed inspection report. Within these areas, the inspection consisted of selective examination of procedures and representative records, interviews with personnel, and observations by the inspector.

Within the scope of this inspection, no items of noncompliance were disclosed.

During the inspection an apparent deviation from an FSAR commitment was observed. The deviation is identified in Section VI of the summary of the enclosed report. You are requested to inform us of your plans for implementation of this commitment.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosed inspection report will be placed in the NRC's Public Document Room. If this report contains any information that you believe to be proprietary, it is necessary that you submit a written application to this office requesting that such information be withheld from public disclosure. If no proprietary information is identified, a written statement to that effect should be submitted. If an application is submitted, it must fully identify the bases for which information is

claimed to be proprietary. The application should be prepared so that information sought to be withheld is incorporated in a separate paper and referenced in the application since the application will be placed in the Public Document Room. Your application, or written statement, should be submitted to us within 20 days. If we are not contacted as specified, the enclosed report and this letter may then be placed in the Public Document Room.

Should you have any questions concerning this letter, we will be glad to discuss them with you.

Very truly yours,

Norman C. Moseley
Director.

Enclosure:
IE Inspection Report Nos.
50-250/75-7 and 50-251/75-7

FLORIDA POWER & LIGHT COMPANY

June 20, 1975
L-75-304

Mr. Norman C. Moseley, Director
Office of Inspection and Enforcement, Region II
U. S. Nuclear Regulatory Commission
230 Peachtree Street, N. W., Suite 818
Atlanta, Georgia 30303

Dear Mr. Moseley:

Re: IE:II:AKH
50-250/75-7
50-251/75-7

During the course of an inspection conducted by personnel from your office on May 12-14, 1975, an apparent deviation from an FSAR commitment was observed. The specific finding states:

"During an inspection of cable tray penetrations, two locations were observed which appeared to deviate from the fire stop installation commitment made in the FPL FSAR, page 8.2-9."

Response:

FSAR page 8.2-9 states in part:

> "Cable trays passing through walls or floors are provided with fire stops as shown in Figure 8.2-19."

One tray of control cables in the Unit 4 control rod drive room (not Unit 3 as stated in the inspection report) and four large cable trays entering the auxiliary building above the main corridor doors did not have fire stops. All of these cable trays now have fire stops.

There is no proprietary information in the subject report.

Yours very truly,

James R. Tomonto

Robert E. Uhrig
Vice President

REU:MAS:nch

cc: Jack R. Newman, Esquire

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
230 PEACHTREE STREET, N. W. SUITE 818
ATLANTA, GEORGIA 30303

JUL 21 1975

Turkey Point
3 & 4

In Reply Refer To:
IE:II:AKH
50-250/75-7
50-251/75-7

Florida Power and Light Company
ATTN: Dr. R. E. Uhrig
Vice President of Nuclear Affairs
P. O. Box 013100
Miami, Florida 33101

Gentlemen:

Thank you for your letter of June 20, 1975, informing us of steps you have taken to correct the deviations concerning activities under NRC Operating License Nos. DPR-31 and DPR-41 which were brought to your attention in our letter of May 29, 1975. We will examine your corrective actions and plans during subsequent inspections.

We appreciate your cooperation with us.

Very truly yours,

Norman C. Moseley

Norman C. Moseley
Director

AMERICAN REVOLUTION BICENTENNIAL 1776-1976

UC files

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
REGION IV
611 RYAN PLAZA DRIVE, SUITE 1000
ARLINGTON, TEXAS 76012

July 8, 1975

Nebraska Public Power District
ATTN: Mr. J. M. Pilant, Director
Licensing and Quality Assurance
P. O. Box 499
Columbus, Nebraska 68601

Gentlemen:

Thank you for your letter of June 30, 1975, in response to our letter and Notice of Violation dated May 29, 1975. As a result of our review, we find that additional information is needed. Specifically, your response does not indicate the corrective steps which will be taken to avoid further noncompliance nor does it indicate the date when full compliance will be achieved.

As a result of a telephone conversation between you and Mr. J. E. Gagliardo of this office on July 8, 1975, we understand that you will promptly submit the above additional information for our review.

Sincerely,

G. L. Madsen

G. L. Madsen, Chief,
Reactor Construction and
Operations Branch

bcc: w/ltr J. M. Pilant to ~~XXX~~ E. M. Howard, dtd 6/30/75

H. D. Thornburg, IE:HQ (1)
~~IE:~~HQ (4)
DR Central Files
L:HQ (4)
PDR:HQ
Local PDR
TIC
NSIC
Nebraska State Department of Health
Kansas State Department of Health

Nebraska Public Power District

GENERAL OFFICE
P.O. BOX 499, COLUMBUS, NEBRASKA 68
TELEPHONE (402) 564-8561

July 15, 1975

Mr. E. Morris Howard, Director
Office of Inspection and Enforcement
Region IV
U. S. Nuclear Regulatory Commission
611 Ryan Plaza Drive Suite 1000
Arlington, TX 76012

Subject: IE Inspection Report No. 50-298/75-07
Cable Separation Status
Additional Information

Dear Mr. Howard:

This letter is in response to your letter to the District dated July 8, 1975 which requested additional information regarding the subject inspection report.

In our response to the inspection report, dated June 30, 1975, we indicated that corrective action had been taken with regard to five of the six noted discrepancies. We believe that, with the exception of the two cable trays within the reactor drywell, we are in full compliance with the cable separation criteria. We believe that a physical inspection of the reactor drywell is required to determine a proposed solution to the remaining discrepancy, and therefore, are planning to complete such inspection during the outage necessary to effect a repair of the in-core instrument tube vibration problem, tentatively scheduled for October, 1975.

We believe that further non-compliance in this area is effectively precluded by our requirement of strict adherence to the procedural controls governing design changes to the facility.

We believe that the above information is complete, however, should you have any questions or require additional information, please do not hesitate to contact me.

Sincerely,

Jay M. Pilant

Jay M. Pilant
Director of Licensing
and Quality Assurance

mrh

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
REGION IV
611 RYAN PLAZA DRIVE, SUITE 1000
ARLINGTON, TEXAS 76012

July 18, 1975

Nebraska Public Power District
ATTN: Mr. J. M. Pilant, Director
Licensing and Quality Assurance
P. O. Box 499
Columbus, Nebraska 68601

50-295/75-07

Gentlemen:

Thank you for your letters dated June 30, 1975, and July 15, 1975, in response to our letters dated May 29, 1975, and July 8, 1975. We have no further questions at this time and will review your corrective action during a future inspection.

Sincerely,

G L Madsen

G. L. Madsen, Chief,
Reactor Construction and
Operations Branch

bcc: w/ltr J. M. Pilant to E. M. Howard, dtd 7/15/75

H. D. Thornburg, IE:HQ (1)
IE:HQ (4)
DR Central Files
L:HQ (4)
PDR:HQ
Local PDR
TIC
NSIC
Nebraska State Department of Health
Kansas State Department of Health

Nebraska Public Power District

COOPER NUCLEAR STATION
P.O. BOX 98, BROWNVILLE, NEBRASKA 68321
TELEPHONE (402) 825-3811

June 30, 1975

Mr. E. Morris Howard
U. S. Regulatory Commission
Office of Inspection and Enforcement
Region IV
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76012

Subject: IE Inspection Report No. 50-298-75-07
Cable Separation Status

Dear Mr. Howard:

This letter is in response to your letter dated May 29, 1975 which transmitted the subject inspection report.

Six discrepancies were noted in the subject report in the area of cable separation. The following corrective actions have been completed for each of the discrepancies under C. Cable Separation:

(1) On the northeast end of the Reactor Building where a Division I and a Division II cable tray run vertically from the 931'-6" elevation to the 903'-6" elevation with a horizontal separation of approximately eight inches, a solid metal cover was installed along the complete length of the inside of the Division I tray. This installation satisfies the separation criteria of the FSAR.

(2) On the northeast corner of the Reactor Building, near the ceiling of the 903'-6" elevation, where a Division II cable tray crosses over a Division I cable tray with a vertical separation of less than eighteen inches, the solid metal cover on the bottom of the Division II cable tray was shifted during cable pulling exposing a gap in the metal barrier of approximately one inch. This gap has been closed and a solid metal barrier separates the two cable trays.

(3) On the east end of the Cable Spreading Room (918'-0" elevation), a terminal box has Division I and Division II cables leaving the box and running in cable trays which parallel each other with a horizontal separation of less than six inches for a length of about two feet. A fire barrier has been installed between these two trays by the addition of metal covers on the bottom of each tray thus completely surrounding both trays with a metal barrier for approximately six feet. These trays are now in accordance with the FSAR separation criteria.

(4) On the northwest corner of the Cable Spreading Room where a Division I cable tray crosses over a Division II cable tray, the metal cover over the Division II tray was estended to five feet on each side of the cross-over area as required by the FSAR cable separation commitment.

(5) In the Auxiliary Relay Room the Division II cables from the Division II cabinet are laid in a cable tray which runs west and north and exits through the northwest area of the ceiling. The cable tray is installed in such a manner that it passes within a three feet horizontal separation of the Division I cable tray which collects the cables from the Division I relay cabinet. A vertical fire barrier approximately 30" x 40" has been installed between the two cable trays as required by the FSAR cable separation commitment.

(6) Two cable trays ring the Reactor Drywell with most of the runs being in the upper position of the 903'-0" elevation. The trays are designated C85 (Division I) and C84 (Division II) and are run with C85 above C84 with a separation of about one foot. Evaluation of this reported discrepancy is currently in progress and we will advise your office, as soon as possible, with regard to an acceptable resolution. We would like to point out that the Reactor Drywell is currently, and will remain, inerted with nitrogen which precludes the ability of the Drywell atmosphere to support combustion.

Should you have any questions, or require additional information regarding the above responses, please do not hesitate to contact me.

Sincerely,

Jay M. Pilant
Director of Licensing
and Quality Assurance

mrh

Cooper

Suffrit

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
REGION IV
611 RYAN PLAZA DRIVE, SUITE 1000
ARLINGTON, TEXAS 76012

May 29, 1975

Nebraska Public Power District
ATTN: Mr. J. M. Pilant, Director
Licensing and Quality Assurance
P. O. Box 499
Columbus, Nebraska 68601

Docket No. 50-298

Gentlemen:

This refers to the inspection conducted by Mr. J. E. Gagliardo of this office during the period May 5-7, 1975 and May 16, 1975, of activities authorized by NRC Operating License DPR-46, and to his discussion of the findings with Mr. L. C. Lessor and other members of your staff on May 7, and with Mr. K. L. Meyer on May 16, 1975.

Principle areas examined during the inspection included: (1) construction specifications for fire barriers and compartment boundary seals for safety related cables; (2) construction specifications for fire retardant coating for safety related cables; (3) maintenance and modification procedures; (4) visual examination of fire barriers and boundary seals; (5) reactor operations at reduced power; (6) power ascension test results; (7) follow-up on actions reported under IEB's 75-03, 75-04 and 75-04A; (8) actions taken on Abnormal Occurrence Reports; and (9) training. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector.

During this inspection it was found that certain of your activities were not conducted in full compliance with NRC requirements, as set forth in the Notice of Violation, enclosed herewith as Enclosure (1). This notice is sent to you pursuant to the provisions of Section 2.201 of the NRC's "Rules of Practice", Part 2, Title 10, Code of Federal Regulations. Section 2.201 requires you to submit to this office, within 30 days of your receipt of this notice, a written statement or explanation in reply including: (1) corrective steps which have

been taken by you, and the results achieved; (2) corrective steps which will be taken to avoid further noncompliance; and (3) the date when full compliance will be achieved.

In accordance with Section 2.790 of the NRC's "Rules of Practice", Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosed inspection report will be placed in the NRC's Public Document Room. If this report contains any information that you or your contractors believe to be proprietary, it is necessary that you make a written application within 20 days to this office to withhold such information from public disclosure. Any such application must include a full statement of the reasons on the basis of which it is claimed that the information is proprietary, and should be prepared so that proprietary information identified in the application is contained in a separate part of the document. If we do not hear from you in this regard within the specified period, the report will be placed in the Public Document Room.

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

G L Madsen

G. L. Madsen, Chief,
Reactor Construction and
Operations Branch

Enclosure:
1. Notice of Violation
2. IE Inspection Report No. 50-298/75-07

cc: L. C. Lessor, Superintendent, w/encls.
Cooper Nuclear Station
P. O. Box 98
Brownville, Nebraska 68321

Cooper Nuclear Station
License No. DPR-46

ENCLOSURE (1)

NOTICE OF VIOLATION

Based on the results of an NRC inspection conducted on May 5-7 and May 16, 1975, it appears that certain of your activities were not conducted in full compliance with NRC requirements as indicated below:

Contrary to 10 CFR Part 50, Appendix B, Criterion V and the licensee's response to FSAR Question No. 7.4 in FSAR Amendment 15, six (6) discrepancies were found in the implementation of the cable separation criteria and several of the fire barriers for safety related electrical cables contained combustible urethane foam strips which had not been covered with fire retardant paint.

This infraction had the potential for causing or contributing to an occurrence related to health and safety.

Other infractions identified through your internal audit program and which were reported in a timely manner and corrected, are set out in the inspection report. No additional information is needed for these items at this time.

Brunswick

UNITED STATES
NUCLEAR REGULATORY COMMISSION
DIRECTORATE OF REGULATORY OPERATIONS
REGION II
230 PEACHTREE STREET, N. W. SUITE 818
ATLANTA, GEORGIA 30303

June 3, 1975

Karl V. Seyfrit, Office of Inspection and Enforcement, Headquarters

CAROLINA POWER AND LIGHT, BRUNSWICK 2, D/N 50-324,
SPECIAL FIRE INSPECTION

Attached is a copy of Inspection Report No. 50-324/75-06 covering the special fire inspection conducted at Brunswick 2 on May 5-9, 1975.

A deviation from commitments in the FSAR is identified in the report and the licensee has been requested to inform us of his plans for implementation. We believe that the bulletin responses and the existing commitments in the FSAR and construction specifications will be adequate for resolution of the problems until such time as other criteria may be developed and imposed by NRC.

F. J. Long, Chief
Facilities Operations Branch

Enclosure: Rpt No. 324/75-06

cc: wo/e
F. S. Cantrell
W. S. Little

Brunswick

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
230 PEACHTREE STREET, N. W. SUITE 818
ATLANTA, GEORGIA 30303

JUL 22 1975

In Reply Refer To:
IE:II:FSC
50-324/75-06

Carolina Power and Light Company
ATTN: Mr. J. A. Jones
Executive Vice President
Engineering, Construction and Operation
336 Fayetteville Street
Raleigh, North Carolina 27602

Gentlemen:

Thank you for your letter of June 30, 1975, informing us of steps you are taking to correct the deviation from commitments in your Final Safety Analysis Report concerning activities under NRC Operating License No. DPR-62 which were brought to your attention in our letter of June 5, 1975. We will examine your corrective actions and plans during subsequent inspections.

We appreciate your cooperation with us.

Very truly yours,

Norman C. Moseley

Norman C. Moseley
Director

AMERICAN REVOLUTION BICENTENNIAL 1776-1976

Carolina Power & Light Company

June 30, 1975

To: G. Gower
Fm: RO: II

FILE: NG-3513 (B)

SERIAL: NG-75-1000

Mr. Norman C. Moseley, Director
U. S. Nuclear Regulatory Commission
Region II - Suite 818
230 Peachtree Street, N.W.
Atlanta, Georgia 30303

Dear Mr. Moseley:

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NO. 2
LICENSE NO. DPR-62
RESPONSE TO FSAR DEVIATION

In your letter of June 5, 1975, you forwarded a copy of IE Inspection Report 50-324/75-06 for the Brunswick Steam Electric Plant, Unit No. 2. We have reviewed the report and find that it does not contain any information of a proprietary nature.

As noted in your letter, the report identifies an activity that appears to be a "deviation" from a commitment in the Final Safety Analysis Report. The apparent deviation and Carolina Power & Light Company's response to it are addressed in the following text:

Deviation From FSAR Commitment

During an inspection of firestops, numerous locations were observed which appeared to deviate from the fire retardant barrier installation commitment made in the Brunswick 1 and 2 FSAR.

CP&L Response

In our response to you concerning IE Bulletin 75-04A dated June 11, 1974, we provided additional information concerning our program for ensuring that plant firestops for Brunswick Unit No. 2 are installed as outlined in the applicable specification. We believe this report adequately outlines our plans for implementation of our FSAR commitment.

If you have any further questions concerning this matter, please contact us.

Yours very truly,

E. E. Utley
Vice-President
Bulk Power Supply

RBS:bn

CC: Mr. N. B. Bessac
Mr. E. G. Hollowell
Mr. P. W. Howe
Mr. J. A. Jones
Mr. R. E. Jones
Mr. W. B. Kincaid
Mr. D. B. Waters

Fort St Vrain

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
REGION IV
611 RYAN PLAZA DRIVE, SUITE 1000
ARLINGTON, TEXAS 76012

July 22, 1975

Public Service Company of Colorado
ATTN: Mr. C. K. Millen
Senior Vice President
P. O. Box 840
Denver, Colorado 80201

Docket No. 50-267

Gentlemen:

Thank you for your letter of July 11, 1975, in response to our letter and Notice of Violation dated June 19, 1975. We have no further questions at this time and we will review your corrective action during a future inspection.

Sincerely,

G. L. Madsen

G. L. Madsen, Chief,
Reactor Construction and
Operations Branch

bcc: w/ltr C. K. Millen to E. M. Howard, dated 7/11/75

H. D. Thornburg, IE:HQ (1)
IE:HQ (4)
DR Central Files
L:HQ (4)
PDR:HQ
Local PDR
TIC
NSIC
Colorado State Department of Health

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
230 PEACHTREE STREET, N. W. SUITE 818
ATLANTA, GEORGIA 30303

In Reply Refer To:
IE:II:FSC
50-324/75-06

JUN 5 1975

Carolina Power and Light Company
ATTN: Mr. J. A. Jones
Executive Vice President
Engineering, Construction and Operation
336 Fayetteville Street
Raleigh, North Carolina 27602

Gentlemen:

This refers to the inspection conducted by Mr. F. S. Cantrell of this office on May 5-9, 1975, of activities authorized by NRC Operating License No. 62 for the Brunswick facility, and to the discussion of our findings held with Mr. E. G. Hollowell, on May 9, 1975, at the conclusion of the inspection.

Areas examined during this inspection included Carolina Power and Light Company investigation of two Reactor Blowdowns, and the Status of Fire-stops. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector.

Within the scope of this inspection, no items of noncompliance were disclosed.

An infraction identified through your internal audit program is shown in the details of the enclosed inspection report. The appropriate report was made and corrective action initiated or completed and no additional information is needed for this item at this time.

During the inspection it appeared that a commitment in the Final Safety Analysis Report had not been met. The item is identified as a "deviation" and appears in Section VI of the summary of the enclosed report. You are requested to inform us, within 20 days, of your plans for implementation of this commitment.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosed inspection report will be placed in the NRC's Public Document Room. If this report contains any information that you believe to be proprietary, it is necessary that you submit a written application

to this office requesting that such information be withheld from public disclosure. If no proprietary information is identified, a written statement to that effect should be submitted. If an application is submitted, it must fully identify the bases for which information is claimed to be proprietary. The application should be prepared so that information sought to be withheld is incorporated in a separate paper and referenced in the application since the application will be placed in the Public Document Room. Your application, or written statement, should be submitted to us within 20 days. If we are not contacted as specified, the enclosed report and this letter may then be placed in the Public Document Room.

Should you have any questions concerning this letter, we will be glad to discuss them with you.

Very truly yours,

Norman C. Moseley

Norman C. Moseley
Director

Enclosure:
IE Inspection Report No.
50-324/75-06

PUBLIC SERVICE COMPANY OF COLORADO
P. O. BOX 840 · DENVER, COLORADO 80201

C. K. MILLER
SENIOR VICE PRESIDENT

July 11, 1975

Mr. E. Morris Howard
U.S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region IV
611 Ryan Plaza Drive
Suite 1000
Arlington, Texas 76012

Subject: Docket #50-267
NRC Inspection Report 75-07
of June 19, 1975

Dear Mr. Howard:

In response to the Inspection Report of June 19, 1975, concerning the audit by Mr. T.F. Westerman during the period May 11-16, 1975 and May 27-30, 1975 of activities authorized by NRC Operating License No. DPR-34 and pursuant to the provisions of Section 2.201, Part 2, Title 10, Code of Federal Regulation, we submit the following:

The response numbers reference the corresponding number under the appropriate heading of the audit report.

A. INFRACTIONS

1. The infraction stated that GAC Field Inspection Reports 4230 and 4231 documented sign-off of specific requirements which were subsquently found to be nonconforming. Field inspection Report 4230 documented that 100% inspection and acceptance of installed fire stops by the contractor QA. The fire stops and covers for the vertical river fire stop from the diesel room had not been installed and were inadvertently signed off with FIR 4230. This was the only discrepancy noted on the rather extensive fire stop installation program. This matter has been brought to the attention of GAC and PSC has been advised by GAC that their personnel involved have been notified of the discrepancy and the consequences thereof. GAC inspection personnel have been instructed to document in detail results of inspection to avoid further infraction of this type.

Field Inspection Report 4231 was written to indicate that the specific items which had been tagged as problems by GAC Engineering and assembled into a package denoted as WA92F1863. (No Revisions) were complete. The segregation criteria for those specific problems denoted in WA92F1863 (No Revisions) had been met utilizing zipper tubing where minimum seperation criteria could not be achieved. The sign off of FIR 4231 was not intended to conclude that the bus and loop segregation problem in all tray areas was satisfactorily resolved, only those specifically denoted in WA92F1863 (No Revision). While the wording on FIR-9231 may have been misleading, we do not feel this to be an infraction since the specific work (WA-92-F1863) was referred to on FIR-4231.

2a A comprehensive inspection and evaluation is currently being conducted throughout the plant to determine the extent of problems regarding compliance with existing separation and segregation criteria. Upon completion of this effort problem area will be indentified and corrections will be applied as applicable. Discussions are presently under way with NRC to determine an approved resolution to this matter.

2b A comprehensive review of the cable tabulation is being conducted in conjunction with the present inspection and evaluation program. A new cable tabulation list will be provided upon completion of this work.

2c No response required per NRC cover letter dated June 19, 1975.

2d Separation of control relays 9200A and 9200B which were found to be lacking in proper separation will be correction upon completion of our overall separation and segregation identification and evaluation program.

2e The solid metal snap-on covers for trays will be provided following the completion of the on-going separation inspection, correction and audit effort.

Due to the nature of the entire separation and segregation criteria subject, we cannot give estimated completion dates for items 2a, 2b, 2d and 2e at this time. We will keep your office advised of our progress on these matters.

We trust the foregoing information satisfactorily answers the infractions identified. If there are further questions, please advise.

Very truly yours,

C.K. Millen
Senior Vice President

CKM/FES/ds

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
REGION IV
611 RYAN PLAZA DRIVE, SUITE 1000
ARLINGTON, TEXAS 76012

June 19, 1975

Public Service Company of Colorado
ATTN: Mr. C. K. Millen
Senior Vice President
P. O. Box 840
Denver, Colorado 80201

Docket No. 50-267

Gentlemen:

This refers to the inspection conducted by Mr. T. F. Westerman, of this office during the period May 11-16 and 27-30, 1975, of activities authorized by NRC Operating License No. DPR-34, and to the discussion of the findings with members of your staff at the conclusion of the inspection.

Areas examined during this inspection are described in our report, which is enclosed with this letter (enclosure 2). Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector.

Based on the results of this inspection, it appears that certain of your activities were not conducted in full compliance with NRC requirements, as set forth in the Notice of Violation, enclosed herewith as Enclosure 1. These items of noncompliance have been categorized into the levels as described in our correspondence to you dated December 31, 1974. This notice is sent to you pursuant to the provisions of Section 2.201 of the NRC's "Rules of Practice", Part 2, Title 10, Code of Federal Regulations. Section 2.201 requires you to submit to this office, within twenty (20) days of your receipt of this notice, a written statement or explanation in reply including: (1) corrective steps which have been taken by you and the results achieved; (2) corrective steps which will be taken to avoid further violations; and (3) the date when full compliance will be achieved. One other infraction identified through your internal audit program for which corrective action has been initiated, is set out in the attached inspection report. No additional information is needed for this item at this time. Since Item A.2.c was corrected prior to the completion of this inspection, no reply to this item is required.

In accordance with Section 2.790 of the NRC's "Rules of Practice", Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosed inspection report will be placed in the NRC's Public Document Room. If this report contains any information that you or your contractors believe to be proprietary, it is necessary that you make a written application within 20 days to this office to withhold such information from public disclosure. Any such application must include a full statement of the reasons it is claimed that the information is proprietary. It should be prepared so that proprietary information identified is contained in a separate part of the document, since the application, excluding this separate part, will also be placed in the Public Document Room. If we do not hear from you in this regard within the specified period, the report will be placed in the Public Document Room.

Should you have any questions regarding this inspection, we will be pleased to discuss them with you.

Sincerely,

J. Lieberman (for)

G. L. Madsen, Chief,
Reactor Construction and
Operations Branch

Enclosures:
1. Notice of Violation
2. IE Inspection Report No. 50-267/75-07

cc: F. E. Swart, Superintendent, w/encls.
Fort St. Vrain Nuclear Station
P. O. Box 368
Platteville, Colorado 80651

D. W. Warembourg, Resident Engineer
Fort St. Vrain Nuclear Station
P. O. Box 368
Platteville, Colorado 80651

bcc: w/o encl. 2
H. D. Thornburg, IE:HQ (1)
IE:HQ (4)
DR Central Files (1)
L:HQ (1)
PDR:HQ
Local PDR
TIC
NSIC
Colorado State Department of Health

Public Service Company of Colorado
Docket No. 50-267
License DPR-34

ENCLOSURE 1

NOTICE OF VIOLATIONS

Based on the results of an NRC inpsection during the period of May 11-16, and 27-30, 1975, it appears that certain of your activities were not conducted in full compliance with conditions of your NRC License No. DPR-34 as indicated below:

A. INFRACTIONS

1. Contrary to 10 CFR 50, Appendix B, Criterion XVI, which states in part that, "Measures shall be established to assure that conditions adverse to quality . . . and nonconformances are promptly indicated and corrected.", Field Inspection Reports 4230 and 4231 document sign-off of specific requirements which were subsequently found to be nonconforming.

   This infraction constituted the potential for causing an occurrence related to health and safety.

2. Contrary to 10 CFR 50, Appendix B, Criterion V, which states in part that, "Activities affecting quality shall be prescribed by documented instructions . . . and shall be accomplished in accordance with these instructions . . . .", the following activities affecting quality were not accomplished in accordance with documented FSAR requirements and/or Construction Specification 1-N-2:

   a. The routing of redundant circuits in separate trays has not been maintained as specified in the FSAR, Question 7.4(a). Tray 23M2 was found to contain 18 asbestos zipper covered bundles of Bus 1 cable in a tray containing Bus 2 cable.

   b. Essential circuit cable (cables 7096, 7097, 75194, 26673, and 26715) associated with the emergency diesels had not been identified to be essential in the cable tabulation as specified in Construction Specification 1-N-2, Supplement 1.

   c. Separation of essential redundant instrument bus power supply cables was not maintained as specified in the FSAR, Question 7.4(d). Bus 2, essential instrument power supply cable (cables 25590 and 25593) were installed in a cable raceway in Panel I-10, Bay 900, which contained Bus 1, essential instrument power supply cable. Separations had not been provided.

d. Separations of essential redundant emergency power load shedding relays was not maintained as specified in the FSAR, Question 7.4(d). Control relays 9200A and 9200B were found to be side-by-side. Separations had not been provided.

e. The solid metal snap on-off covers for trays carrying low-level signal cable located in the 480 switchgear room and the auxiliary electric equipment room has not been installed as specified in the FSAR, Question 7.4(a).

This infraction constituted the potential for causing an occurrence related to health and safety.

U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
REGION IV

IE Inspection Report No. 50-267/75-07 | Docket No. 50-267

Licensee: Public Service Company of Colorado | License No. DPR-34

Facility: Fort St. Vrain Nuclear Generating Station | Category B

Location: Platteville, Colorado

Type of Licensee: Power Reactor (HTGR 330, MWe-GGA)

Type of Inspection: Special, Announced

Dates of Inspection: May 11-16, 27-30, 1975

Dates of Previous Inspection: May 5-7, 1975

Inspector: R. Smith for
T. F. Westerman, Reactor Inspector — 6-15-75 Date

Accompanying Inspector: None

Other Accompanying Personnel: C. F. Miller, Division of Licensing, Technical Review Branch

V. D. Thomas, Senior Instrument and Control Engineer, IE:HQ

Reviewed By: T. P. Gwynn for
G. L. Madsen, Chief, Reactor Construction and Operations Branch — 6-18-75 Date

SUMMARY OF FINDINGS

Enforcement Action

A. Items of Noncompliance

1. Violations

None

2. Infractions

a. Contrary to 10 CFR 50, Appendix B, Criterion XVI, measures have not been established in the field inspection program to assure that nonconformances are promptly identified and corrected. Field Inspection Reports 4230 and 4231 document sign-offs of specific requirements which were found to be nonconforming by the IE inspector in the accompaniment of licensee personnel. (DETAILS, paragraphs B.1 and B.4.a(2))

b. Contrary to 10 CFR 50, Appendix B, Criterion V, activities affecting quality were not accomplished in accordance with documented FSAR requirements and/or Construction Specification 1-N-2.

(1) The licensee has identified that separation of nonessential/essential circuits has not been maintained in the Reactor Building as specified in the FSAR, Question 7.4(a). (DETAILS, paragraph 4.b(1)(a))

(2) Cables of different buses and/or loops have been installed in the same tray using asbestos zipper covering to maintain separations. The FSAR, Question 7.4(a) specifies that cables of different buses and/or loops are to be routed in separate trays and/or trays with a metal divider. (DETAILS, paragraph 4.b(1)(b))

(3) Essential circuit cable associated with the emergency diesels was not designated essential in the cable tabulation listing. Construction Specification 1-N-2, Supplement 1, specifies that such essential cable will be identified by a hexagonal symbol. (DETAILS, paragraph 4.b(4))

(4) Separations of redundant instrument bus power supplies in panel I-10, Bay 900 has not been maintained as specified in the FSAR, Question 7.4(d). The licensee rerouted the affected cables prior to the completion of this inspection. (DETAILS, paragraph 4.b(3)(a))

(continued)

(5) Separations of redundant emergency power load shedding relays in panel I-66 has not been maintained as specified in the FSAR, Question 7.4(d). (DETAILS, paragraph 4.b(3)(b))

(6) The solid metal snap-off covers for trays carrying low-level signal cable have not been installed as specified in the FSAR, Question 7.4(a). (DETAILS, paragraph B.4.b(4))

Deficiencies

None

Licensee Action on Previously Identified Enforcement Actions

1. The following items of noncompliance identified in IE Inspection Report 50-267/75-02 were reviewed and are considered closed:

   a. Plant Operations Review Committee Membership (DETAILS, paragraph B.7.a)

   b. Nuclear Facility Safety Committee Membership (DETAILS, paragraph B.7.b)

   c. Semiannual Report/Record of Scrams (DETAILS, paragraph B.7.c)

   d. Late Abnormal Occurrence Reports (DETAILS, paragraph B.7.d)

2. The status of the following items of noncompliance identified in IE Inspection Report 50-267/75-04 was reviewed. (Each of these items are under review by IE:HQ with respect to enforcement action):

   a. Fire Protection

      Physical installation of fire stops was verified as complete. Cable separation is incomplete. Permanent corrective action with respect to flammable material in the cable spreading room and the open battery room door was not complete and therefore not inspected. (DETAILS, paragraph B.1 and 4)

   b. Seismic Design of Reserve Shutdown System

      Installation of seismic restraints and bottle racks were verified as complete. Calculations have been completed that verify the adequacy of the design. (DETAILS, paragraph B.2)

(continued)

Design Changes

None

Other Significant Findings

Current Unresolved Items

1. 7507-01 Cable/J Wall Penetrations

The practice of maintaining cable separations by use of asbestos zipper covering from the cable trays to the J wall penetrations is considered an unresolved item. The FSAR does not describe this as an acceptable practice. (DETIALS, paragraph B.4(c))

Status of Previously Identified Unresolved Items

1. 7504-4 Seismic Restraints for Class I Bottles

Calculations have been performed which demonstrate the seismic adequacy of Class I Bottles.

This item is considered resolved. (DETAILS, paragraph B.3)

Management Interview

Management Interviews were held with Mr. Swart, Superintendent, Nuclear Production, and other plant staff on May 16 and 30; and with Mr. Brey, Superintendent, Operations on May 28, 1975. Mr. Thomas, IE:HQ, and Mr. Miller, Division of Licensing, were present during the May 28, 1975 exit meeting (only).

A. General

The areas inspected, as reported in the Details Section of this report, were summarized. The inspector also stated that the main purpose of this inspection was to determine the status of the plant prior to escalation of power above 2%.

B. Items of Noncompliance

The apparent items of noncompliance with the Commission's requirements were discussed as identified in the Enforcement Section of this report.

(continued)

DETAILS

A. Persons Contacted

Public Service Company of Colorado

R. Kishiyama, Electrical Engineer
J. Reesy, Electrical Engineer
J. Reader, Resident Engineer
F. Swart, Superintendent, Nuclear Production
L. Brey, Superintendent, Operations
F. Mathie, Superintendent, Maintenance
D. Warembourg, Director of QA
J. Bissett, Quality Assurance
J. Solakiewicz, Jr., Quality Assurance
D. Rogers, Operation Supervisor
E. Hill, Senior Results Engineer

General Atomic

J. Zanot, Site Project Manager
D. Glenn, Site Engineer
R. Ayres, Electrical Engineering
J. Bauer, Electrical Engineering

Sargent & Lundy

A. Nathan, Electrical Engineering

B. Report of Subjects Inspected

1. Fire Protection (Reference: Inspection Report 50-267/75-04)

The inspector verified, by random visual inspection, that fire stops have been installed per Construction Specification 1-N-2 as modified by Field Change Notices (FCN) S&L 483, 479, 482, and 484. (FCN S&L 483 documented the addition of vertical fire stops. FCN's S&L 479, 482, and 484 were added to justify material deviations from Specification 1-N-2).

Field Inspection Report (FIR) 4230 documented 100% inspection and acceptance of installed fire stops by contractor QA.

During the random visual inspection the inspector, in the accompaniment of the licensee engineering personnel (who were performing a concurrent inspection), found that covers for the vertical riser fire stop from the diesel rooms had not been installed as stated in FIR 4230. The riser opening through the overhead had not been sealed as required by construction drawing E-54. The fire stop installation was completed prior to the end of this inspection.

(continued)

No further inspection of the physical installation of fire stops is to be performed by IE:IV; however, enforcement action is under review by IE Headquarters regarding this item of noncompliance. IE:IV will followup on the licensee's response to IE Bulletin 75-04/04A regarding fire stops at a subsequent inspection.

The failure to identify the incomplete diesel room fire stops as nonconforming is identified as an item of noncompliance with respect to 10 CFR 50, Appendix B, Criterion XVI.

2. Seismic Design of Reserve Shutdown System (Reference: Inspection Report 50-267/75-04)

The inspector visually verified that seismic restraints and bottle racks have been installed for the instrument panels and helium bottles associated with the Reserve Shutdown System.

The inspector was shown vendor seismic calculations (dated 5/7/75) for this modification which confirm the adequacy of the Reserve Shutdown System during a seismic event. The licensee's engineering organization has documented their review and concurrence of the design in a memo dated 5/9/75.

No further inspection of this item is to be performed by IE:IV; however, enforcement action is under review by IE Headquarters for this item of noncompliance.

3. 7504-04 Seismic Restraints for Class I Bottles

The inspector was shown calculations summarized by a licensee's memo dated 5/9/75, that show that the seismic adequacy has been determined for gas bottles associated with other Seismic Class I bottle racks (Helium and Hydrogen blanket gas bottles for the surge tanks, and the Helium circulator brake and seal system gas bottles). No changes to these systems were indicated by the calculations to be necessary.

Unresolved Item 7504-5 (Inspection Report 50-267/75-04) is considered resolved with respect to seismic restraints for Class I Bottles.

4. Cable Separations

a. Cable Separation Auxiliary Electric Equipment Room

(1) Corrective action is still in progress with respect to cable separations. The inspector, in the accompaniment of the licensee, found numerous areas within the auxiliary electric equipment room where the FSAR Question 7.4(a) Separations Criteria (6 inches of separations or

(continued)

asbestos zipper cover, had not been met for both temporary test cable and permanent cable. In example, above panel I-36B, Loop 1, Bus 1 (orange) cable crossed a Loop 2, Bus 2 (blue) with less than 6-inch separations. An asbestos zipper cover had not been provided. Also, on top of the panels there was a considerable amount of cable laying together which had not been properly separated.

(2) The inspector did find that Field Inspection Report FIR 4231, dated 5/13/75, stated that bus and loop segregation in the tray areas had been found satisfactory, although the licensee and inspector were continuing to identify problems. The licensee stated, with respect to FIR 4231, that there had been no closeout of this item by Public Service Company of Colorado and that the inspection effort by licensee was still continuing.

The apparent improper sign-off of FIR 4231 is considered an item of noncompliance with respect to 10 CFR 50, Appendix B, Criterion XVI.

(3) The licensee estimated that an approximate 10,000 feet of asbestos zipper covering had been installed during the period of April 24 through May 1975. The majority of this asbestos zipper covering was installed to obtain separations for cable running from the panels located in the auxiliary electric room to the cable trays (above), and from the cable trays to the floor level of the control room (above).

At the exit meeting on 5/30/75, the licensee reported that all work had been completed in the auxiliary electric equipment room with exception of nine cables in the southeast corner and some temporary cabling.

b. New Problem Areas

(1) Nonessential/Essential Cable Separations

(a) The licensee has identified that problems exist in the reactor building with respect to the crossover of nonessential cables within essential trays. The FSAR, Question 7.4(a), states that nonessential circuits may be routed in trays with essential circuits; however, nonessential circuits assigned to segregated tray or section are required to

(continued)

follow the separation criteria for an essential cable in that same tray until they enter a control board. The magnitude of this problem has not been determined.

This is considered an item of noncompliance with respect to 10 CFR 50, Appendix B, Criterion V.

(b) The inspector found cable in the same tray of opposite bus or loop had been routed using asbestos zipper covering to provide separations. The FSAR, Question 7.4(a), makes no provision for this type of routing, but requires that cable be routed by segregated trays. An example, in tray 23M2 (auxiliary electric equipment room) the inspector counted 18 separate bundles of yellow color coded (loop 2, bus 1) asbestos zippered cables. The other cable in this tray was color coded blue (loop 2, bus 2).

This is considered an item of noncompliance with respect to 10 CFR 50, Appendix B, Criterion V.

(c) The inspector also found that for cables routed from trays to the J wall penetrations, asbestos zipper covering has been installed to maintain separations of segregated cables. The FSAR, Question 7.4(a) and (d), specifies the use of asbestos zipper covering from the trays to the control boards located in or above the auxiliary electric equipment room and the 480 vital switchgear room area, and within control boards. This applies where 6 inch separation cannot be maintained. Penetration WP-6 from the auxiliary electric equipment room into the reactor was cited as an example in which approximately 100 cables had been routed with zipper covering. All buses and loops passed through this penetration.

The use of asbestos zipper covering from the trays to the J wall penetrations is considered an unresolved item, since the FSAR does not describe this method of cable routing.

(d) The licensee has initiated an extensive audit to determine the extent of the separations problem with respect to nonessential/essential cable separations. the licensee believes that the majority of the cable which is not meeting the FSAR, Question 7.4(a),

(continued)

separations criteria is nonessential cable. This is based on an audit that was performed in 1971 by the licensee to determine the separations of essential cable and circuits.

(2) Cable Tabulation

During the tracing of cable, the inspector found that a part of the control cable associated with the emergency diesel generators was not designated as essential in the Cable Tabulation listing. These cables are as follows:

7096	Control (Bus 2)
7097	Standby Generator 1A and 1B Control Timer (Bus 2)
25194	Interlock Auto Sequences Programmer for ESS Load (Bus 2)
26673	Sequence Programmer 1B Control (Bus 2)
26715	Control (Bus 1/Bus 2)

Specification 1-N-2, Supplement 1, specifies that essential cables are to be designated by a hexagonal symbol in the cable tabulation listing. Such identification was not evident for the above listed cables.

The licensee stated in response to this finding, that although the Cable Tabulation appeared in error, these cables had been inspected during the 1971 audit conducted by the licensee and were treated as essential circuits. The licensee is, however, reviewing the Cable Tabulation Lists as part of the ongoing audit of the essential/nonessential separations problem.

This is considered to be an item of noncompliance with respect to 10 CFR 50, Appendix B, Criterion V.

(3) Redundant Circuits Within Control Boards

(a) The inspector found essential redundant cables 25590 and 25593 (color coded blue/Loop 2, Bus 2) in the same race way in panel I-10, Bay 900, with essential redundant cables 25722 and 25777 (color coded orange/Loop 1, Bus 1), and 25724 (color coded yellow/Loop 2, Bus 1). This intermixing of cable was identified as a failure to maintain separation of redundant instrument bus power supplies (Bus 1 and Bus 2). These two buses are associated with shutdown cooling actuation. The FSAR, Question 7.4(d) specifies

(continued)

that redundant circuits within control boards will be separated by a minimum of 6 inches or otherwise suitable barriers are to be provided. Modification and rerouting of 25590 and 25593 was accomplished prior to the completion of this inspection. The licensee stated that this was felt to be only an isolated case.

This is considered to be an item of noncompliance with respect to 10 CFR 50, Appendix B, Criterion V.

(b) The inspector found that redundant load sheding relays 9200A and 9200B for buses 1A and 1B were setting side-by-side in panel I-66. A barrier for separations had not been provided as specified by FSAR, Question 7.4(d).

This is considered to be an item of noncompliance with respect to 10 CFR 50, Appendix B, Criterion V.

(c) The licensee stated at the exit meeting on 5/30/75 that a 100% audit of all control panels associated with essential circuits would be performed for all circuit changes since the licensee's 1971 audit of essential circuits.

(4) Low Level Signal Cable Tray Covers

The inspector found that the solid metal snap-off covers had not been installed for trays carrying low level signal cable in the 480 vital switchgear room and the auxiliary electric equipment room. The FSAR, Question 7.4(a), specifies that metal snap on-off covers are to be used for such trays.

The licensee stated at the exit meeting on 5/28/75 that covers will be provided following the completion of all ongoing inspection and corrective action.

This is considered to be an item of noncompliance with respect to 10 CFR 50, Appendix B, Criterion V.

(continued)

c. Other Electrical Items Discussed

(1) Method of Identifying Electrical Separation Deficiencies

The inspector found that the licensee and contractor personnel were identifying electrical separation deficiencies by tying white strips of plastic flagging at each location. Documentation of flagged areas was not maintained. The inspector questioned that this method provides assurance that flagged areas have been properly corrected.

The licensee stated at the exit meeting on 5/30/75, that a means for documenting flagged areas would be provided to assure that corrective action has been completed.

(2) Fire Stops

The inspector questioned the lack of specific contractor inspection requirements to assure that repaired fire stops are properly inspected following the installation of new cable or conduit. Such work is performed under a contractor Work Authorization.

The licensee stated at the exit meeting of 5/30/75, that inspection requirements would be included as a part of the QA Inspector Checklist performed by contractor QA personnel.

5. PCRV Cooling ΔT (Reference: IE Inspection Report 50-267/74-04)

The licensee stated that a modification in the Control Rod Drives (CRD) penetration area is being considered based on the results of B Series Testing (Sequence 1-7). The licensee stated that an apparent reverse flow of Helium up the CRD is occurring.

Postulated concrete temperatures in excess of 250°F for power levels above 9% have been calculated. The installation of seals in the CRD's is currently being evaluated.

IE:IV will continue to follow the status of this item.

6. Backup Bearing Water System

The inspector reviewed test data (tests performed 5/22/75), which demonstrated that all four Helium Circulators can be transferred from normal bearing water to backup bearing water without a trip of circulators occurring. In order for a successful transfer to occur,

(continued)

however, the emergency feedwater header was maintained at 2950 psig. The emergency feedwater header supplies the backup bearing water system. In the past, the dip in bearing water pressure normally resulted in a circulator trip due to the 475 psig bearing water low pressure trip. (The lowest pressure recorded during current testing was 590 psig.) This inturn normally resulted in the trip of additional circulators due to the apparent interplay in the buffer/helium system (buffer/mid-buffer trip).

It is the licensee's intent (for present operation) that the emergency feedwater header pressure will be maintained at 2950 psig or greater by use of the B motor operated feed pump. Standard Operating Procedure (SOP) 21-01 and 31 have been temporarily changed to include the 2950 psig emergency feedwater header pressure requirement for reactor operation through Sequence step 16 of the B Series Testing. It is the licensee's intent to reappraise this situation prior to going beyond 8% power (Sequence step 16).

7. Items of Noncompliance (Reference: IE Inspection Report 50-267/75-02)

a. Plant Operations Review Committee Membership

A plant memo of 4/3/75 formally designates the alternate chairman and specifies that the secretary and chairman are responsible to verify proper quorum.

IE:IV considers this item closed.

b. Nuclear Facility Safety Committee (NFSC) Membership

A company letter of 4/9/75 formally designates NFSC membership. Resumes of membership qualifications have been provided.

IE:IV considers this item closed.

c. Semiannual Report/Record of Scrams

A supplement to the January 1975 Semiannual Report was forwarded to NRC on 3/14/75. The licensee stated that future Semiannual Reports will contain the proper information regarding scrams.

IE:IV considers this item closed.

d. Late Abnormal Occurrence Reports

The licensee has stated that where a final report cannot be made within 10 days, a preliminary report will be made. Recent reports have been timely.

IE:IV considers this item closed.

(continued)

8. Status of AO 75-03A "Failure of Moisture Monitors to Trip at Safety System Setting" (Reference: IE Inspection Report 50-267/75-04)

a. N_2 Lines

Following further review, the licensee is relocating the N_2 lines in the moisture monitor penetration B-1 through B-6. This modification is being performed to isolate liquid N_2 lines from the He sample lines. This work is being performed under Work Authorization (WA) 11E1868 and is complete with exception of penetration B-3.

b. EG&G 440 Moisture Monitors

Have not been installed.

c. Heat Trace of Sample Line

Installation and testing of the heat trace system for the Sample Lines is complete.

d. Technical Specification Change

Request for revision is under review by the Division of Reactor Licensing. Additional testing by the licensee is being performed to substantiate the change request.

e. Procedure Completion

The overall plant administrative procedure specifying responsibilities and detail actions in the event of moisture ingress had been drafted and is currently under review.

IE:IV will continue to follow the status of this item.

9. Status of AO 75-07/7A "Moisture Ingress and Reactivity Anomaly" (Reference: IE Inspection Report 50-267/75-04)

a. Remote Set Point Control for the High Pressure Separator Flow Controller

Work Authorizations WA E1810 and E1810-1 have been issued. The material required is on-site. All prefabrication has been complete. Installation is pending PCRV depressurization.

b. PCRV/Surge Tank Δp Indication

Work Authorization WA F1809 has been issued. The status is the same as "a" above.

(continued)

c. Modification and Procedure Change/Drain Valve Pelton Cavity

The material required is on-site. A Revised Field Change Notice has not yet been issued. It is still the licensee's plan to modify the pelton cavity outlet isolation control circuitry vice the drain valve control circuitry.

IE:IV will continue to follow the status of this item.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
799 ROOSEVELT ROAD
GLEN ELLYN, ILLINOIS 60137

Board Cities Sight
E
Kirkpatrick

JUL 1 8 1975

Commonwealth Edison Company
ATTN: Mr. Byron Lee, Jr.
Vice President
P. O. Box 767
Chicago, Illinois 60690

Docket No. 50-254
Docket No. 50-265

Gentlemen:

This letter is in response to Mr. Abel's letter to our office dated July 2, 1975, relating to our inspection of the Quad-Cities Station on April 30 and May 1, 1975.

With respect to your comments on Section 4, Paragraph a.(1), we have reviewed the text and have found the inspection results were appropriately documented.

With respect to your comments on Section 4, Paragraphs b.(1) and (2) we acknowledge your comment that the report only restates the specifications. The paragraphs should have included the following: "(1) Secondary containment penetrations through the turbine building - reactor building wall are sealed with foamed concrete. RTV, and DUC seal. (2) Some spare conduits are not capped as required by specifications." Information in the Public Document Room will be upgraded to reflect this change.

With respect to your comments on Section 4, Paragraph c., we find the description accurate as stated.

We expect that you have completed your inspection of electrical penetrations and that you have implemented corrective actions if required.

Should you have any additional questions concerning these matters, we will be glad to discuss them with you.

Sincerely yours,

Gaston Fiorelli, Chief
Reactor Operations Branch

bcc w/ltr dtd 7/2/75:
PDR
Local PDR
NSIC
TIC
Anthony Roisman, Esq.

AMERICAN REVOLUTION BICENTENNIAL 1776-1976

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

Ginna

AUG 7 1975

Rochester Gas and Electric Corporation
Attention: Mr. Leon D. White, Jr.
Vice President
Electric and Steam Production
89 East Avenue
Rochester, New York 14649

License No. DPR-18
Inspection No. 75-10
Docket No. 50-244

Gentlemen:

This refers to the inspection conducted by Mr. J. Hannon of this office on July 15-18, 1975 at the Ginna Facility, Ontario, New York, and the Corporate Home Office in Rochester, New York of activities authorized by NRC License No. DPR-18 and to the discussions of our findings held by Mr. Hannon with Mr. Lang and other members of your staff at the conclusion of the inspection, and to a subsequent telephone discussion between Mr. Hannon and Mr. Platt of your staff on July 23, 1975.

Areas examined during this inspection are described in the Office of Inspection and Enforcement Inspection Report which is enclosed with this letter. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector.

Our inspector also verified the steps you have taken to correct the Items of Noncompliance brought to your attention in a letter dated February 14, 1975. We have no further questions regarding your action at this time.

Based on the results of this inspection, it appears that certain of your activities were not conducted in full compliance with NRC requirements, as set forth in the Notice of Violation, enclosed herewith as Appendix A. These items of noncompliance have been categorized into the levels as described in our correspondence to you dated December 31, 1974. This notice is sent to you pursuant to the provisions of Section 2.201 of the NRC's "Rules of Practice", Part 2, Title 10, Code of Federal Regulations. Section 2.201 requires you to submit to this office, within twenty (20) days of your receipt of this notice, a written statement or explanation in reply including: (1) corrective steps which have been taken by you and the results achieved; (2) corrective steps which will be taken to avoid further items of noncompliance; and (3) the date when full compliance will be achieved. In addition to the need for corrective action

regarding these specific items of noncompliance, we are concerned about the implementation of your quality assurance program that permitted them to occur. Consequently, in your reply, you should describe in particular, those actions taken or planned to improve the effectiveness of your quality assurance program. As shown in the Notice of Violation, enclosed with this letter, Item No. D is a recurrent or uncorrected item. In your response please give this matter your particular attention.

Another activity appears to be a deviation from an appropriate code, standard, or guide, as set forth in the Notice of Deviation, enclosed herewith as Appendix B. With respect to this deviation, please include in your response your comments concerning this item, a description of any steps that have been or will be taken to correct it, a description of any steps that have been or will be taken to prevent recurrence, and the date all corrective actions or preventive measures are or will be completed.

In accordance with Section 2.790 of the NRC's "Rules of Practice", Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosures will be placed in the NRC's Public Document Room. If this report contains any information that you (or your contractor) believe to be proprietary, it is necessary that you make a written application within 20 days to this office to withhold such information from public disclosure. Any such application must include a full statement of the reasons on the basis of which it is claimed that the information is proprietary, and should be prepared so that proprietary information identified in the application is contained in a separate part of the document. If we do not hear from you in this regard within the specified period, the report will be placed in the Public Document Room.

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

James P. O'Reilly

James P. O'Reilly
Director

Enclosures:
1. Appendix A, Notice of Violations
2. Appendix B, Notice of Deviation
3. IE:I Inspection Report No. 50-244/75-10

cc: C. Platt, Plant Superintendent
A. E. Upton, Esquire
T. R. Schuler, QC Engineer

bcc:
IE Chief, FS&EB
IE:HQ (4 cys ltr, 5 cys report)
IE Files
Central Mail & Files
Directorate of Licensing (4 cys ltr, 13 cys report)
Regulatory Standards (1 cy ltr, [illegible] cys report)
PDR
Local PDR
NSIC
TIC
REG:I Reading Room
Regional Directors (II, III, IV) (Report Only)
ELD
State of [illegible]

License No. DPR-18

APPENDIX A

NOTICE OF VIOLATIONS

Based on the results of an NRC inspection conducted on July 15-18, 1975, it appears that certain of your activities were not conducted in full compliance with conditions of your NRC Facility License No. DPR-18 as indicated below:

A. Contrary to 10 CFR 50.59 the plant was operated without flame barrier material installed as stated on page 8.2-60 of the Ginna Station FDSA and no evaluation of this design change was made.

This Infraction had the potential for causing or contributing to an occurrence related to health and safety.

The inspector verified corrective actions to bring the cable penetration installation in compliance with the FDSA and additional actions taken to upgrade the flame barrier material to current standards. Based on this review, no further action is required at this time.

B. Contrary to Technical Specification 3.3.1.1c, the "C" safety injection pump was inoperable from May 27 through June 11, 1975.

This Infraction had the potential for causing or contributing to an occurrence related to health and safety.

While this item was identified and reported properly by the licensee, the corrective action to preclude recurrence was judged to be inadequate. Additional action and a response to this item is required.

C. Contrary to 10 CFR 50, Appendix B, Criterion VI, Ginna Station Quality Assurance Manual, Section 6, Revision 1, DOCUMENT CONTROL dated 10/2/74, and QC 602, Revision 8, PLANT PROCEDURE DOCUMENT CONTROL dated 4/12/75, administrative procedures governing safety related activities were reviewed and approved for use by persons other than the PORC, QC, and Plant Superintendent.

This item is a Deficiency.

D. Contrary to Technical Specification 6.4.1 the plant was being operated with unapproved procedures, in that:

1. two (2) unapproved procedures were found posted in the auxiliary building; and

2. unapproved Standing Orders were found to amplify, modify, and direct plant operations.

The above constitutes a repeat item of noncompliance. Failure to comply with the same basic requirement was brought to your attention in a Notice of Violation following inspection 74-08 dated September 27, 1974.

This item is a Deficiency.

E. Contrary to 10 CFR 50, Appendix B, Criterion XVII and Quality Assurance Manual Chapter XVII, operating logs with the exception of the Shift Foreman Log and Official Record, were found to have no administrative control for review and retention.

This item is a Deficiency.

F. Contrary to 10 CFR 50, Appendix B, Criterion II and Quality Assurance Manual Section 1.3., the main steam isolation valve solenoid air supply valves are not considered safety related and are not included in the Quality Assurance Program.

This item is a Deficiency.

License No. DPR-18

APPENDIX B

NOTICE OF DEVIATION

Based on the results of an NRC inspection conducted on July 15-18, 1975 it appears that one of your activities having safety significance was not conducted in conformance with generally accepted industry practice, as indicated below:

Contrary to ICRU Report 20 RADIATION PROTECTION INSTRUMENTATION AND ITS APPLICATION, Section IV Calibration of Instrumentation, issued October 1, 1971, there was no evidence that the portal monitors in use at the plant had been calibrated within a period of time that would reasonably be expected, to verify proper operation.

This item is a Deviation.

I Form 12
n 75) (Rev)

U. S. NUCLEAR REGULATORY COMMISSION

OFFICE OF INSPECTION AND ENFORCEMENT

REGION I

Inspection Report No: 50-244/75-10 | Docket No: 50-244

ensee: Rochester Gas and Electric Corporation | License No: DPR-18

89 East Avenue | Priority:

Rochester, New York | Category: C

Safeguards Group:

ation: Ontario, New York

e of Licensee: PWR, 1520 MWe (W)

of Inspection: Routine, Unannounced

es of Inspection: July 15-18, 1975

es of Previous Inspection: June 19-20, 1975

orting Inspector: [signature] for, 8/4/75
J. N. Hanks, Reactor Inspector — DATE

ompanying Inspectors: [signature] 8/4/75
P. J. Kellogg, Reactor Inspector — DATE

DATE

DATE

er Accompanying Personnel: DATE

ewed By: [signature] 8/5/75
A. B. Davis, Senior Reactor Inspector — DATE
Reactor Operations Branch

SUMMARY OF FINDINGS

A. Items of Noncompliance

1. Violations

None

2. Infractions

a. Contrary to 10 CFR 50.59 the plant was operated without flame barrier material installed as stated on page 8.2-6c of the Ginna Station FDSA and no evaluation of this design change was made. (Detail 4.f)

3. Deficiencies

a. Contrary to QC 602, Revision 8, "Plant Procedure Document Control," dated April 12, 1975, administrative procedures governing safety-related activities were reviewed and approved for use by persons other than the PORC, QC and Plant Superintendent. (Detail 4.c)

b. Contrary to Technical Specification 6.4.1 the plant was being operated with unapproved procedures. This is a repeat Item of Noncompliance - reference Report 50-244/74-08. (Details 9.a(3) and 9.d)

c. Contrary to 10 CFR 50, Appendix B, Criterion XVII and the QA Manual, Chapter XVII, operating logs with the exception of the Shift Foreman's Log and the Official Record, were found to have no administrative requirements for review and retention. (Detail 9.c)

d. Contrary to 10 CFR 50, Appendix B, Criterion II and the QA Manual, Chapter 1.3, the Main Steam Isolation Valve solenoid air supply valves are not covered by the QA Program. (Detail 5.c)

B. Deviations

(These are areas which do not conform to licensee commitments to the NRC or to provisions of guides, codes, standards and acceptable practices which have safety significance, but are not Items of Noncompliance.)

Contrary to accepted industry practice, there was no evidence that the portal monitors in use at the plant had been calibrated within a period of time that would reasonably be expected to verify proper operation. (Detail 9.e)

Licensee Action on Previously Identified Enforcement Items

A. Corrective actions taken in response to remaining Items of Noncompliance identified in IE:I Report 50-244/75-01 were reviewed. (Detail 3)

Design Changes

A. Installation of Penetration Seals with BISCO Silicone foam. (Detail 4.f)

Unusual Occurrences

A. Failure of 1C Safety Injection Pump to start manually from Bus 16. (Licensee reports to Directorate of Regulatory Operations dated February 14 and 26, 1975, AO's 75-2, 75-3, and 75-5). (Detail 5.b(1))

B. Failure of "A" MSIV solenoid air supply valves during surveillance test. (Licensee report to Directorate of Regulatory Operations dated February 21, 1975, AO 75-04) (Detail 5.b(2))

C. Inadvertent insertion of greater than .5% $\Delta K/K$ with the reactor subcritical. (Licensee report to Directorate of Regulatory Operations dated March 25, 1975, AO 75-06). (Detail 5.b(3))

D. Abnormal degradation of steam generator tubes. (Licensee reports to Directorate of Regulatory Operations dated April 7, and May 8, 1975, AO 75-07) (Detail 5.b(4))

E. Degradation of charcoal filter iodine removal efficiency. (Licensee report to Directorate of Regulatory Operations dated April 17, 1975, AO 75-08) (Detail 5.b(5))

F. Pinhole leak in CRDM housing. (Licensee report to Directorate of Regulatory Operations dated April 22, 1975, AO 75-09) (Detail 5.b(6))

G. Improper SI System Valve Lineup. (Licensee report to Directorate of Regulatory Operations dated June 25, 1975, AO 75-10) (Detail 5.b(7))

H. Improper reactor coolant sampling frequency. (Licensee report to Directorate of Regulatory Operations dated June 30, 1975, AO 75-11) (Detail 5.b(8))

I. Inadvertent drop of two control rods. (Licensee report to Directorate of Regulatory Operations dated March 17, 1975, Unusual Event 75-01) (Detail 6.b)

J. Leak at letdown line drain reducer weld. (Licensee report to Directorate of Regulatory Operations dated May 8, 1975, Unusual Event 75-02) (Detail 6.b)

Other Significant Findings

A. Current Findings

1. Acceptable Areas

(These are areas which were inspected on a sampling basis and findings did not involve an Item of Noncompliance, Deviation, or Unresolved Item.)

a. Review of Previous Items of Noncompliance. (Detail 3)
b. Review of Unusual Event Reports. (Detail 6)
c. Review of Startup Testing. (Detail 7)
d. Review of Refueling Outage Operations. (Detail 8)
e. Review of fuel integrity indications. (Detail 10)

2. Unresolved Items

(These are items for which more information is required in order to determine whether items are acceptable or Items of Noncompliance.)

None identified

3. Licensee Identified Items of Noncompliance

a. Infractions

Contrary to Technical Specification 3.3.1.1.c the "C" Safety Injection pump was inoperable from May 27 through June 11, 1975. Corrective action to preclude recurrence was judged to be inadequate. Additional action and a response to this item is required. (Detail 5.d)

b. Deficiency

Contrary to Technical Specification 4.1.b, Table 4.1-2, Note (1), reactor coolant sampling frequency was not increased to once per day as required. (Detail 5.e)

B. Status of Previously Unresolved Items*

1. The following items have been resolved:

a. Modified time delay circuit board in the 81-1/11B underfrequency relay circuit for the 4160 volt bus 11B. (Detail 4.d)

b. Training program for Maintenance Department (including I&C) personnel. (Detail 4.b)

c. Usage of Chemistry Procedures. (Detail 4.e)

d. Prerequisite signoff blocks for certain refueling procedures. (Detail 4.g)

e. RG&E interface with Gilbert Associates for design activities. (Detail 4.h)

f. Interface between corporate and plant personnel for design changes and modifications. (Detail 4.i)

2. More information is required to resolve the following items:

a. Facility Requirements for Fire Stops on Electrical Safety-Related Cables and Penetration Seals in Maintenance and Modification procedures. (Reference Report 50-244/75-07) (Not addressed in this report)

* Items identified in previous inspection reports as Open Items, have been reclassified as Unresolved Items.

b. Evaluation of feedwater line vibration report. (Reference Report 50-244/75-09) (Detail 4.a)

c. Conflicting license requirements for containment leak rate testing. (Reference Report 50-244/75-05) (Not addressed in this report)

Management Interview

A management interview was held at the site on July 18, 1975.

Personnel Attending

Mr. F. Aman, Office Supervisor, Security Supervisor
Mr. C. R. Anderson, Quality Assurance Coordinator
Mr. W. Backus, Shift Foreman
Mr. L. S. Lang, Assistant Plant Superintendent
Mr. J. C. Noon, Maintenance Engineer
Mr. G. H. Paris, Instrument Foreman
Mr. B. R. Quinn, Health Physicist
Mr. T. R. Schuler, Quality Control Engineer

The following summarizes the items discussed:

A. Purpose of the Inspection. (Detail 2)
B. Review of Previous Items of Noncompliance. (Detail 3)
C. Review of Previous Unresolved Items. (Detail 4)
D. Review of Abnormal Occurrence Reports. (Detail 5)
E. Review of Unusual Event Reports. (Detail 6)
F. Review of Startup Testing. (Detail 7)
G. Review of Refueling Outage Operations. (Detail 8)
H. Review of Plant Operations. (Detail 9)
I. Review of Fuel Integrity Indications. (Detail 10)

DETAILS

1. Persons Contacted

Mr. F. Aman, Office Supervisor, Security Supervisor
Mr. C. R. Anderson, QA Coordinator
Mr. W. Backus, Shift Foreman
Mr. E. J. Beatty, Shift Foreman, Procedures Coordinator
Mr. S. V. Bullock, QC Technician
Mr. E. L. DeMerrit, Supervisor, Chemistry and Health Physics
Mr. E. C. Edgar, I&C Technician
Mr. R. W. Eliasz, Nuclear Engineer (telephone)
Mr. C. V. Hartlieb, Results and Test Coordinator
Mr. R. Junot, Shift Foreman
Mr. R. H. Latz, Electrical Foreman
Mr. R. C. McCredy, Manager, Nuclear Engineering
Mr. T. Meyer, Cadet Nuclear Engineer
Mr. R. W. Morrill, Training Coordinator
Mr. J. C. Noon, Maintenance Engineer
Mr. G. H. Paris, Instrument Foreman
Mr. C. H. Peck, Nuclear Engineer
Mr. B. R. Quinn, Health Physicist
Mr. J. Scheetz, Manager, Electrical Engineering
Mr. T. R. Schuler, Quality Control Engineer
Mr. R. E. Smith, Assistant Chief Engineer
Mr. S. M. Spector, Assistant Maintenance Engineer

2. Inspection Purpose

The inspector stated that the purpose of the inspection was to:

a. review certain items identified in previous inspections;
b. review selected Abnormal Occurrence and Unusual Event Reports;
c. review startup testing and refueling outage operations;
d. review plant operations; and
e. examine fuel integrity indications.

The licensee acknowledged this information.

3. Corrective Action Review

(Reference Licensee letter to Chief, Reactor Operations Branch, Region I, dated March 21, 1975)

a. The inspector's review of corrective actions in response to Report 50-244/75-01 included:

(1) record reviews, observations and discussions with licensee personnel to verify that corrective measures taken were as described in the response letter;

(2) verification that appropriate management controls were invoked to avoid further occurrences; and

(3) observation of posted copies of enforcement correspondence as required by 10 CFR 19.11.

b. The following documents (by item number) were examined for each item discussed in the licensee's response letter:

(1) A 37.0, Revision 2, "Conduct of Operations for Safety Evaluations as Related to Facility Modifications, Special Tests or Experiments," dated March 13, 1975;

(2) QC 401, Revision 5, "Control of Procurement Documents for Purchased Materials, Parts, Components and Services," dated March 20, 1975;

(3) Audit Finding Corrective Action Report dated March 10, 1975;

(4) QC 801, Revision 4, "Control of Accepted Material, Parts and Components," dated March 14, 1975;

(5) (This item previously resolved in Report 50-244/75-05); and

(6) New Procedure for Removal of Original Drawings from the File Room dated January 24, 1975.

The inspector had no further questions on the licensee's resolution of the above items. Findings were acceptable.

4. Previously Identified Unresolved Items

a. Feedline Vibration

(Reference IE:I Report 50-244/75-09)

(1) The inspector observed readout instrumentation from LVDT's located on the feedwater piping inside containment. The instrumentation indicated pipe motion of less than 0.1 inch while the plant was at 100% power. The "B" feedwater pipe appeared to exhibit the most

steady state vibration. The following criteria had been established:

(a) movement > 0.1 inch - notify duty engineer; and
(b) movement > 0.25 inch - change load.

(2) ST-75-4, Revision 1, "Turbine Plant Start-up Program Following Plant Trip of 0956 Hours on 6-17-75," dated June 26, 1975 was completed on June 27, 1975. This procedure provided for controlled power escalation above 25%, and had been successfully employed to achieve full power operation.

(3) June 1975 Main Steam and Feedwater Welds Examination Final Report was reviewed. This package included liquid penetrant examination records, visual examination records, and instrument calibration records pertaining to NDE inspections conducted in accordance with commitments to the NRC documented in Report 75-09.

(4) The licensee stated that a report to the NRC including an evaluation of the vibration transient would be submitted by July 18, 1975. While the licensee's actions appear to be appropriate, the inspector stated that this item will remain unresolved pending a review of the licensee's report.

- The licensee acknowledged this information.

b. Maintenance Department Training

(Reference IE:I Report 50-244/75-01)

A-50.7 (Draft) "Maintenance Training Program," was reviewed. The licensee stated that this procedure covered all Maintenance Department Personnel, including Instrument and Control technicians. The licensee stated that the draft procedure had received a PORC approval on July 14, 1975, and was currently being processed for issuance. The inspector had no further questions on this item. This item is resolved.

c. Chemistry and Health Physics Procedures

(Reference IE:I Report 50-244/75-01)

(1) The inspector reviewed the following items with respect to the licensee's program for upgrading the subject procedures:

(a) QC-602, Revision 8, "Plant Procedure Document Control," Figure 1, dated April 12, 1975;

(b) Memorandum from G. Hoyt Whipple (University of Michigan) dated March 1, 1975 containing comments and suggestions on selected HP Procedures;

(c) Health Physics and Chemistry Procedures;

(d) Radioactivity Discharge Procedures;

(e) Primary Chemistry Procedures;

(f) Water Chemistry Procedures; and

(g) Environmental Sampling Procedures.

(2) The following are examples of those procedures that appeared to be primarily administrative in content:

(a) HP-0, "Format for Health Physics and Chemistry Procedures," dated January 9, 1975; and

(b) PC-0/WC-0, "Chemistry Procedure Usage, dated July 1, 1975.

(3) The inspector noted that contrary to the requirements of QC 602, Revision 8, dated April 12, 1975, certain administrative procedures governing safety-related activities conducted by the Chemistry and Health Physics Department appeared to have been approved for use by persons other than the PORC, QC, and Plant Superintendent.

This item is a deficiency.

(4) The inspector identified other examples of the above deficiency during a review of plant operations. Specifically, Operations Standing Order A-73-1 dated February 3, 1975 describes the policy for Operations Standing Orders; although an administrative document affecting safety-related activities, it was issued for use without the required review and approval.

Inter Office Correspondence entitled "Visitor Instructions" dated February 5, 1975 issued by the Office Supervisor to Security Force Personnel required persons to remain in the

portal monitor for five seconds upon egress from the plant. This administrative document had not received the required review and approval. In addition, the inspector noted that several persons observed at random remained in the portal monitor for a period considerably less than five seconds upon egress from the plant. Apparently the document was ineffective in achieving the desired result.

The licensee acknowledged these additional examples of the above deficiency.

(5) The licensee provided the following status with respect to procedure updating:

	Procedures Planned	Completed as of July 18, 1975
Health Physics	35	32
Primary Chemistry	22	20
Water Chemistry	31	31
Radioactive Discharge	11	4
Environmental	10	1

With the exception of the Environmental area, the licensee plans to complete the remaining procedures by October 1, 1975. The remaining environmental procedures are expected to be available by December 31, 1975, although this may change when new Environmental Technical Specifications are issued.

d. UF Relay Modification

(Reference IE:I Report 50-244/75-01)

(1) The inspector reviewed the following documents with respect to the licensee's intended action to upgrade the 4160 volt bus relay installation:

(a) SM 75-30 - Replace existing 4 kv UF Relays with new relays on Buses 11A and 11B dated July 14, 1975; and

(b) the safety analysis for EDR 1068, Revision 1, dated July 7, 1975.

(2) The licensee stated that five new replacement relays had been tested satisfactorily, four of which would be used in the installation, with the remainder placed into spares. The inspector had no further questions in this area at this time.

This item is resolved.

e. Chemistry Procedure Usage

The chemistry department prepared a list of complex or infrequently accomplished analyses that will be conducted by procedure. This list was included in PC-0/WC-0, "Chemistry Procedure Usage," dated July 1, 1975. The inspector had no further questions on this item at this time.

This item is resolved.

f. Flame Barrier Installation

(Reference Report 50-244/75-07)

(1) The licensee stated that the lack of flame barrier material in penetrations as committed in the FDSA was not a result of modifications in which flame barrier material had been deemed not to be safety-related, but rather an apparent omission during construction.

Maintenance Procedure No. M-56.1, Revision 0, "Removal and Placement of Penetration Seals," dated May 5, 1975 provided for the placement of ceramic fiber material in accordance with the license application, as described in Engineering Specification EDR No. 1070, which invoked the requirements of page 8.2-6c of the Ginna Station FDSA. This maintenance activity was completed on May 10, 1975.

SM 75-32, Revision 0, "Installation of Penetration Seals with BISCO Silicone Foam," dated May 5, 1975, was completed on June 5, 1975. The inspector noted that the existing fire barrier material was removed prior to the installation of silicone foam in each case where the foam was installed.

(2) The inspector stated that contrary to the requirements of 10 CFR 50.59:

(a) the plant had been operated without flame barriers installed as described in the safety analysis report;

(b) prior Commission approval had not been obtained to so operate the plant; and

(c) no written safety evaluation was available to indicate that the omission of these barriers did not constitute an unreviewed safety question.

This infraction had the potential for causing or contributing to an occurrence with safety significance.

The inspector stated that the licensee's corrective actions appeared to be appropriate and no further response is considered necessary at this time.

The licensee acknowledged this information.

(3) The inspector stated that based on the corrective action taken in M-[illegible].1 and SM 75-32, it appeared that no further action would be necessary as a result of this infraction.

The licensee acknowledged this information.

g. Refueling Procedure Signoff Blocks

(Reference Report 50-244/75-05)

The inspector observed that Procedures RF-42.0, 43.0, 44.0, and 45.0, Revision 1, dated June 12, 1975 in each case provided for signoff verification of initial conditions.

This item is resolved.

h. Interface Controls with Design Contractor

The inspector determined that the following procedure had been prepared to define the interface:

Review of Architect Engineer Design Documents - Ginna Station dated March 8, 1975.

This item is resolved.

i. Corporate and Plant Design/Modification Interface

The inspector determined that the following procedure had been revised to define the interface:

Design Modification Control,
Revision 3, dated March 26, 1975.

This item is resolved.

5. Review of Abnormal Occurrence Reports

a. Selected Abnormal Occurrences were reviewed to verify that:

(1) The cause was identified and that details were clearly reported to the NRC and facility management;

(2) Corrective action described in the licensee's report was taken to prevent recurrence;

(3) Each event was reviewed and evaluated as required by the Technical Specifications; and

(4) Safety limits, limiting safety system settings, and limiting conditions for operation were not exceeded.

This review included inspection of PORC minutes, Maintenance Requests, Maintenance Procedures and Maintenance Records, Surveillance Procedures, Procurement Documentation, and discussions with various staff personnel.

b. The following Abnormal Occurrences were reviewed:

(1) AO 75-2, AO 75-3, and AO 75-5, Failure of 1C Safety Injection Pump to start manually from Bus 1G;

(2) AO 75-4, Failure of solenoid test valves to operate on "A" Main Steam Isolation Valve during surveillance test;

(3) AO 75-6, Unplanned insertion of greater than 0.5% $\Delta K/K$ with the reactor subcritical;

(4) AO 75-7, Abnormal degradation of Steam Generator Tubes;

(5) AO 75-8, Degradation of Charcoal Filter Iodine Removal Efficiency;

(6) AO 75-9, Pinhole leak in cap attached to Magnetic Control Rod Drive Travel Housing K-7;

(7) AO 75-10, Personnel error which could prevent the fulfillment of the functional requirements of systems required to cope with accidents analyzed in the SAR; and

(8) AO 75-11, Failure to increase reactor coolant sample test for gross radioactivity concentration to a minimum of once per day when gross radioactivity concentration exceeds 10% of the limit specified in Technical Specification 3.1.4.1.a.

c. During the review of AO 75-04 it was noted that the Main Steam Isolation Solenoid Test Valves are not treated as safety-related and their spare parts are not included in the Quality Assurance Program.

This is contrary to 10 CFR 50, Appendix B, Criterion II, and the Quality Assurance Manual, Section 1.3.1.1, which states, in part:

> "The quality assurance program shall apply to all activities affecting the safety-related functions of all existing Seismic Class I structures, systems, and components, including their foundations and supports, that prevent or mitigate the consequences of postulated accidents that could cause undue risk to the health and safety of the public."

This item is considered to be a deficiency.

As another example, the inspector inquired about replacement parts for the Incore Flux Monitoring System to determine if they were being purchased under the QA program. PO No. N-ZZZ-57554 dated March 19, 1975 for a drive wheel and hub assembly was observed by the inspector to meet the QA program requirements.

d. AO 75-10. The isolation of the "C" Safety Injection pump from May 27 to June 11, 1975 is a violation of Technical Specification Paragraph 3.3.1.1.c.

The licensee's corrective action was judged to be unacceptable in that no method for the verification of status lights on safeguards equipment when assuming control board duties has

been promulgated. The licensee agreed to establish and implement a mechanism for safeguards equipment status light verification. The inspector stated that this item was considered to be an infraction and will require a response from the licensee. The licensee acknowledged this information.

e. AO 75-11. This occurrence was in noncompliance with Technical Specification paragraph 4.1.b, Table 4.1-2, Note (1). The licensee's corrective action appears adequate and no response is required to this deficiency.

f. Except as described above, findings were acceptable.

g. The circumstances associated with the maintenance of two safety-related pieces of equipment were reviewed relative to Technical Specification reporting requirements. This included the Pressurizer Power Operated Relief Valve and the Pressurizer Relief Guard Valve. Findings were acceptable.

6. Unusual Events

a. Selected Unusual Events were reviewed to verify that:

(1) The cause was identified and that details were clearly reported to the NRC and facility management;

(2) Corrective action described in the licensee's report was taken to prevent recurrence;

(3) Each event was reviewed and evaluated as required by the Technical Specifications; and

(4) Safety limits, limiting safety system settings, and limiting conditions for operation were not exceeded.

This review included inspection of PORC minutes, Maintenance procedures, Station Modification Documentation, Quality Assurance Records and discussion with various staff personnel.

b. The following Unusual Events were reviewed:

(1) UE 75-1, Drop of two control rods; and

(2) UE 75-2, Small leak at letdown line drain weld.

c. Findings were acceptable.

7. Startup Testing

a. The inspector reviewed the following items to determine that selected pre-critical and post-critical checks were performed in accordance with Regulatory requirements:

(1) S-15.2, Revision 2, "Flux Mapping Emergency and Calibration Procedure," dated April 16, 1973, completed on July 2, 1975;

(2) Startup Physics Data (Preliminary) dated May 14, 1975;

(3) Flux Maps V-9 through V-12 dated July 9, 1975;

(4) S-15.1, Flux Map V-12 dated July 1, 1975;

(5) Initial Design Target Band with -3.6% Axial Offset dated May 7, 1975; and

(6) Target Band with -4.5% Axial Offset issued after Flux Map V-12 dated July 8, 1975.

b. The inspector noted that the all rods out predicted boron concentration at criticality was 1392 ppm and measured was 1402 ppm. Similarly, the predicted isothermal temperature coefficient was -7.4 pcm/°F and the measured was -3.9 pcm/°F. The inspector had no further questions in this area.

Findings were acceptable.

8. Refueling Outage Operations

a. The inspector reviewed the following items to determine that selected systems disturbed or tested during the refueling outage were returned to an operating status prior to plant startup:

(1) RSSP-11, Revision 2, "Pressurizer Safety Valve Test 434," dated March 5, 1975, completed April 9, 1975;

(2) RSSP-7.0, Revision 3, "Control Rod Drop Test," dated September 24, 1974, completed May 9, 1975;

(3) CP-209, Revision 0, "Calibration of Area Monitors - TA-62 Detectors (R-1-R-9)," dated June 3, 1975, completed July 9, 1975; and

(4) CP 461, Revision 0, "Calibration and/or Maintenance of Steam Generator Level Channel '461'," dated January 18, 1974, completed April 6, 1975.

Findings were acceptable.

9. Review of Plant Operations

a. Shift Logs and Operating Records

The inspector reviewed the records listed below. The review was governed by the licensee's administrative procedure A-20.

(1) Shift Foreman and Official Record: Entries made for the period June 1-July 15, 1975 were reviewed. Documentation involving abnormal occurrences met the requirements of A-20.

(2) Log Book Reviews: The Official Record and the Shift Foreman's Logs were observed to have been reviewed at least once per week by the Operations Engineer for the period of June 1-July 15, 1975.

(3) Operating Orders: The Operations Engineer Standing Orders were reviewed.

It was noted that several of these orders appeared to amplify, modify and direct plant operation.

This is contrary to Technical Specification 6.4.1 which states, in part: "The plant shall be operated and maintained in accordance with approved procedures."

The inspector noted that this practice was also inconsistent with ANSI N18.7-1972, which allows for standing orders for "dissemination to the plant staff of instructions of general and continuing applicability to the conduct of business." Examples given included definition of duties and filing of charts, as opposed to the actual operation of the plant. This item is a deficiency.

(4) Review of PORC Meeting Minutes

The following minutes were reviewed:

(a) Meeting No. 90-75 through 98-75 from June 17 to July 3, 1975.

The inspector noted that no as-built print revisions were found necessary as a result of SM 75-35, "Modification to Main Steam Isolation Valves," completed June 25, 1975. Further review revealed that a vendor drawing used for erection had been marked up to reflect the modification and included in the equipment history file.

The inspector noted that Step 3.6.4 of QC 303, Revision 0, "Modification Control Activities," dated July 1, 1975 referred to "revisions to applicable plant drawings and flow prints" as per QC 603, Revision 5, "Control of Drawings," dated March 7, 1975. The licensee pointed out that QC 603 was only applicable to system flow and circuit drawings.

The inspector noted that QC 1701, Revision 4, "Control of Quality Assurance Records," dated January 24, 1975 requires retention of records and drawing revisions to safety-related systems and components. The licensee stated that this requirement was met by QC 1704, Revision 1, "System and Equipment Histories," dated December 4, 1974. The inspector had no further questions on this item at this time.

(5) Jumper (Bypass Log): Documentation for June 1-July 15, 1975, relative to the use of jumpers and lifted leads was reviewed and no bypassing discrepancies with Technical Specification requirements were observed.

b. Tour of Accessible Areas

The inspector observed operations in the Control Room and made a tour of the Auxiliary and Intermediate Buildings on July 15, 1975. The following observations were made and these were discussed with the Shift Foreman:

(1) Monitoring Instrumentation: Main Control Board readings were compared with local indications for selected parameters. No discrepancies were noted.

(2) Annunciator Alarms: The inspector observed various alarm indications that were received and acknowledged by the Control Room Operator on duty. These conditions were discussed with the Control Room Operator and the Control Room Operator was knowledgeable on the alarms and the actions required.

(3) Shift Staffing: The inspector observed that the operating shift was staffed above the minimum requirements of Technical Specification Figure 6.1-2.

(4) Radiation Controls: Radiation control areas in the Auxiliary Building were reviewed for proper posting, condition of step off pads, and disposal of SWP clothing. Findings were acceptable.

(5) Plant Housekeeping Conditions: Storage of material and components was observed with respect to prevention of safety and fire hazards, and no adverse conditions were identified.

(6) Existence of Fluid Leaks: The inspector observed a leak on feedwater valve 4012. This leak was reported to the Shift Foreman. A trouble report for appropriate maintenance action had been initiated. The inspector had no further questions on this matter at this time.

(7) Existence of Piping Vibrations: No noticeable piping vibrations were observed during this inspection.

(8) Pipe Hanger/Seismic Restraints: Several pipe hangers and seismic restraints (snubbers) on safety-related systems were observed. Findings were acceptable.

(9) Valve Positions/Equipment Start Positions: The suction and discharge valves of the high pressure safety injection pumps and their start switches were observed to be in accordance with Technical Specification requirements.

(10) Equipment Caution/Lockout Tag Information: The tag log was reviewed and the inspector that equipment under tag was consistent with the log and entries on tagging forms (selective review) appeared to be proper.

(11) Plant Tour: The inspector was informed that the last tour made by the Shift Foreman occurred prior to assuming duty.

c. During the inspection of operating logs it was noted that administrative controls for operating logs, with the exception of the Shift Foreman Log and Official Record, do not exist.

This is contrary to 10 CFR 50, Appendix B, Criterion XVII, which states, in part: "Sufficient records shall be maintained to furnish evidence of activities affecting quality. The records shall include at least the following: Operating logs and the results of reviews."

This item is a deficiency.

d. During the inspector's tour of the facility a schematic drawn on masking tape was noted to be posted at the ion exchanger operating station in the auxiliary building. Additionally, a handwritten procedure for the operation of the boric acid batching system was posted in the auxiliary building.

The use of these unapproved procedures for plant operation is another example of the deficiency discussed in 9.a(3) above.

The licensee removed the above noted schematic and procedure during the inspection. The inspector stated that other areas of the plant not covered on his tour should be addressed in the corrective action for this deficiency.

The licensee acknowledged this information.

e. The inspector observed an out-of-date calibration sticker on the external security building portal monitor (PPM-8). The sticker indicated that the portal monitor had been calibrated in February 1974 and was due for calibration in February 1975.

Upon questioning, the licensee could produce no evidence to indicate that the monitor had been calibrated. The licensee indicated that no special calibration was required; that the unit served only as a go-no go instrument, and was not critical to control of radiation exposure or contamination, since another portal monitor (PMC-4) at the control point was used for this purpose.

The technical manual (TM) for both units was reviewed. The test and calibration procedure for Model PPM-8 outlined voltage tests, rate meter calibrations, and post-calibration background settings. The PMC-4 TM also provided for calibration of the unit.

The inspector could not locate any calibration procedures for these units and was thus unable to ascertain that they were calibrated within a period of time that would reasonably be expected to verify proper operation, including meter response time and alarm setpoint.

The inspector stated that failure to calibrate the portal monitors appeared to deviate from generally accepted practice in the industry, as described in ICRU Report 20, "Radiation Protection Instrumentation and its Application," issued October 1, 1971.

The licensee acknowledged this information.

10. Fuel Integrity

The inspector discussed with the licensee the measures taken to ensure that increasing coolant activity caused by leaking fuel would not result in violation of Technical Specifications. Areas discussed were the licensee's previous experience with leaking fuel, monitoring of trends with respect to Technical Specification Limits and the possibility of further failure causing an early refueling.

The inspector had no further questions in this area at this time.

Prairie Island
RFW file
Kirkpatrick

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
799 ROOSEVELT ROAD
GLEN ELLYN, ILLINOIS 60137

AUG 20 1975

Northern States Power Company
ATTN: Mr. Leo Wachter, Vice President
Power Production and System
Operation
414 Nicollet Mall
Minneapolis, Minnesota 55401

Docket No. 50-282
Docket No. 50-306

Gentlemen:

This refers to the inspection conducted by Mr. Brown of this office on July 21 - 23, 1975, of activities at Prairie Island Nuclear Generating Plant Units 1 and 2 authorized by NRC Operating Licenses No. DPR-42 and No. DPR-60 and to the discussion of our findings with Mr. Goering and others of your staff at the conclusion of the inspection.

A copy of our report of this inspection is enclosed and identifies the areas examined during the inspection. Within these areas, the inspection consisted of a selective examination of procedures and representative records, interviews with plant personnel, and observations by the inspector.

No items of noncompliance with NRC requirements were identified within the scope of this inspection.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosed inspection report will be placed in the NRC's Public Document Room. If this report contains any information that you or your contractors believe to be proprietary, it is necessary that you make a written application to this office, within twenty days of your receipt of this letter, to withhold such information from public disclosure. Any such application must include a full statement of the reasons for which it is claimed that the information is proprietary, and should be prepared so the proprietary information identified in the application is contained in a separate part of the document. Unless we receive an application to withhold information or are otherwise contacted within the specified time period, the written material identified in this paragraph will be placed in the Public Document Room.

AMERICAN REVOLUTION BICENTENNIAL 1776-1976

AUG 2 0 1975

No reply to this letter is necessary; however, should you have any questions concerning this inspection, we will be glad to discuss them with you.

Sincerely yours,

Gaston Fiorelli, Chief
Reactor Operations Branch

Enclosure:
IE Inspection Reports
No. 050-282/75-10
and No. 050-306/75-07

cc w/encl:
F. P. Tierney
Plant Manager

bcc w/encl:
PDR
Local PDR
NSIC
TIC

UNITED STATES NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report of Operations Inspection

IE Inspection Report No. 050-282/75-10
IE Inspection Report No. 050-306/75-07

Licensee: Northern States Power Company
414 Nicollet Mall
Minneapolis, Minnesota 55401

Prairie Island Nuclear Generation
Units 1 and 2
Red Wing, Minnesota

License No. DPR-42
License No. DPR-60
Category: C
Category: B

Type of Licensee: (W) PWR 506 MWe

Type of Inspection: Special, Unannounced

Dates of Inspection: July 21 - 23, 1975

Principal Inspector: for C. Brown 8/15/75 (Date)

Accompanying Inspectors: None

Other Accompanying Personnel: None

Reviewed By: W. Little
Senior Inspector
Nuclear Support
Reactor Operations Branch
8/15/75 (Date)

SUMMARY OF FINDINGS

Inspection Summary

Inspection on July 21-32, (75-10, 75-07): Review of compartment boundary seals for electrical penetrations per: SAR commitments, construction specifications, field standards, IEB 75-04 and 75-04A response commitments. Approximately one-half of the penetrations were inspected on at least one side, in the control room, relay room, turbine building, auxiliary building, diesel generator rooms and bus rooms. Deviations per field standards noted; two penetrations had Flamemastic only on one side, cracks or incomplete coverage in Flamemastic coating on approximately 1/3 of penetrations inspected. Duct seal used as sealant on temporary cables was the only flammable material noted in the boundary seals. Major areas to be addressed by facility procedure revisions have been defined for commitments stated in response to IEB 75-04A.

Enforcement Items

None.

Licensee Action on Previously Identified Enforcement Items

A. Systems and Components

None.

B. Facility Items (Plans and Procedures)

None.

C. Managerial Items

None.

D. Noncompliance Identified and Corrected by Licensee

None.

E. Deviations

None.

F. Status of Previously Reported Unresolved Items

Not inspected.

Management Interview

A management interview was conducted with Messrs. Goering, Superintendent; Plant Engineering; Hunstad, Staff Engineer; and Albrecht, Electrical Engineer, at the conclusion of the inspection on July 23, 1975. The following matters were discussed.

A. The inspector inquired into the facility's plans for a periodic testing of the fire protection system equipment and alarm. The licensee stated that this area would be evaluated by September 1, 1975.

B. The inspector stated that the diagram of normal and alternate shutdown, cool down, boration, and water sources, did not reference any procedures. The licensee replied that the appropriate procedure numbers would be added to the diagram. (Paragraph 5, Report Details)

C. The present status of commitments made in response to IEB 75-04A was discussed and the licensee considered it no problem to meet the stated dates.

D. The inspector stated that he had noted during his inspection that no repairs had been performed on any of the boundary seals noted in the May 13, 1975 inspection. The licensee stated this was due to a misinterpretation and the penetration seals would be inspected, evaluated, and repaired by September 1, 1975. (Paragraph 3, Report Details)

E. The inspector stated that in his review of the Task Force recommendations, an evaluation of presently available respiratory equipment as fire fighting equipment was missing. The licensee stated that this evaluation would be made. He also stated that the Task Force had not been disbanded. (Paragraph 5, Report Details)

REPORT DETAILS

1. Persons Contacted

F. P. Tierney, Plant Manager
H. A. Hunstad, Staff Engineer
K. Albrecht, Electrical Engineer
C. D. Brown, Engineer
G. T. Goering, Superintendent Plant Engineering
E. L. Watzl, Radiation Protection Supervisor
J. A. Gonyeau, Training Supervisor

2. FSAR Commitments

Prairie Island's FSAR Section 8.3-7 states: Cable entrances into the control room, relay room, and Class I areas are sealed to prevent the entrance of smoke and fire from outside sources.

3. Boundary Seals

A total of approximately one-half of the boundary seals in the control room, relay room, diesel generator rooms, bus rooms and applicable areas of the turbine and auxiliary buildings[1/] were visually inspected. No open penetrations were noted in the inspections. Minor discrepancies and flamemastic seal degradation were noted as compared to the field standards (procedures developed from Construction Specifications). The present condition of some seals may allow smoke to pass but appear to be a fire barrier.

Due to a misinterpretation of IEB-75-04 and 75-04A the licensee had not performed any repairs on the boundary seals at the time of the inspection. The licensee stated that an evaluation would be made and the seals repaired as necessary by September 1, 1975. The licensee representative stated that any changes resulting from the evaluation to the field standards (procedures used during construction) would be reported as a supplemental response to IEB-74-04A.

The licensee had initiated a work request to remove all duct seal material used on temporary cable pulls and replace with fiber glass packing and RTV or Flamemastic.

4. Status of Commitments to IEB-75-04A[2/]

The NSP task force set up to review areas stated in IEB-75-04A had completed the evaluation of the facility's equipment and procedures. The evaluation results outline the areas to be addressed by the

1/ Including areas reviewed in IE Inspection Rpts No. 050-282/75-04 and No. 050-306/75-06.
2/ NSP Ltr (Wachter to Keppler) dtd 6/30/75.

site. The site had completed some perliminary work on the procedure revisions and personnel training. The licensee stated that no problem in meeting the letter commitments was apparent at the time of the inspection.

The current control of classifying any work request that includes cable pulling as safety related[3/] will continue to be used until the applicable ACD's are revised.

5. NSP Task Force.

The NSP Force evaluations and recommendations were reviewed during the inspection. The Task Force's recommendations were essentially covered in the letter commitments made in response to IEB-75-04A. The inspector indicated to the licensee several areas that had not been included in the Task Force report: The use of currently available respiratory equipment for fire fighting has not been evaluated; The diagram for normal and alternate core cooling should contain the applicable procedure numbers; The training program to include priorities in a realistic time frame for operator actions during losses of major components as in the Browns Ferry Cable Fire. The licensee acknowledged the comments and and agreed to review the items.

3/ IE Inspection Rpts No. 050-282/75-06 and No. 050-306/75-04.

Fort St Vrain Site
Compliance
DCK

AUG 27 1975

Public Service Company of Colorado
ATTN: Mr. C. K. Millen
Senior Vice President
P.O. Box 840
Denver, Colorado 80201

Docket No. 50-267
License No. DPR-34

Gentlemen:

This letter refers to the inspection conducted by Messrs. T. F. Westerman and J. E. Gagliardo of the Region IV office in Arlington, Texas, during the period April 17-24, 1975, of activities authorized by NRC Operating License No. DPR-34, and to their discussion of the findings with members of your staff at the conclusion of the inspection. This letter also refers to the discussion held with you and members of your staff by Messrs. Howard, Madsen, and Westerman of the NRC Region IV office, in your offices on May 15, 1975.

The inspection on April 17-24 consisted of selective examination of procedures, representative plant records, interviews with personnel, and observations by the inspectors. Based on the results of the inspection, it appears that several of your activities were not conducted in full compliance with NRC Regulations and the requirements of your operating license. These activities which were discussed with members of your staff at the conclusion of the April 17-24 inspection, and again, during your meeting with Mr. Howard, et al, on May 15, 1975, are identified in the Notice of Violation enclosed as Appendix A. As you were informed during these discussions, the inspection findings raised considerable question in terms of the adequacy of your management program and procedural control, which appear to have led to the items of noncompliance.

By letter to you dated December 31, 1974, titled "Criteria for Determining Enforcement Action," you were informed that the enforcement actions available to the Commission in the exercise of its regulatory responsibilities include administrative actions in the form of written notices of violation, civil monetary penalties, and orders pertaining to the modification, suspension, or revocation of a license. We consider the matters in Appendix A to be significant items of noncompliance which warrant timely corrective actions. These actions should be directed at the basic cause of failure to comply with Regulatory requirements and should provide adequate management control to assure future compliance.

AUG 27 1975

We plan to continue followup inspections to determine the effectiveness of the steps you have taken with respect to this matter, and our findings as well as your response to this letter, will be the basis for a decision concerning the need for additional enforcement action.

Sincerely,

Original signed by
J G Davis

John G. Davis, Deputy Director
for Field Operations
Office of Inspection and Enforcement

Enclosure:
As stated

Distribution: W/encl.
J. G. Davis, IE:DDFO
B. H. Grier, IE:DRIP
L. I. Cobb, A/D, IE (3)
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J. P. Murray, Chief, ELD:REC
Central Files
IE Reading Files
IE Files
EDO Reading Files
DDFO Reading Files
PDR
LPDR
NSIC
TIC
State of Colorado
L. N. Underwood, AO., IE:DDFO
W. P. Ellis, IE:FCE
T. W. Brockett, IE:FCE
IE:HQ Coordinator: G. H. Smith

OKwK

OKwK

Cross EW OFFICE▶	FCE	FCE	FCE:DRSS	DDFO EXXXXXX	ELD:REC
mk SURNAME▶	WPEllis	TWBrockett	HHWeinburg	JGDAVIS	JPMurray
8/12/75 DATE▶	8-18-75	8-22-75	8-20-75	8-26-75	8- -75

Form AEC-318 (Rev. 9-53) AECM 0240 ★ U.S. GOVERNMENT PRINTING OFFICE: 1973—499-239

AUG 27 1975

APPENDIX A

NOTICE OF VIOLATION

License No. DPR-34

Based on the results of an NRC inspection conducted during the period April 17-24, 1975, it appears that certain of your activities were not conducted in full compliance with NRC regulations and the conditions of your NRC Operating License No. DPR-34 as indicated below:

INFRACTIONS

1. 10 CFR Part 50, Appendix B, Criterion V, INSTRUCTIONS, PROCEDURES, AND DRAWINGS, states, in part, that: "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings."

   The Final Safety Analysis Report, Appendix C.3, under Criterion 3: FIRE PROTECTION (Category A), states that: "The reactor facility shall be designed (1) to minimize the probability of events such as fires and explosions and (2) to minimize the potential effects of such events on safety. Noncombustible and fire resistant materials shall be used whenever practical throughout the facility, particularly in areas containing critical portions of the facility such as containment, control room, and components of engineered safety features."

   Plant Specification No. 1-N-2, "Electrical Installation Work, Part 2," specifies certain requirements relative to cable tray and cable installation by reference to detail construction drawings, e.g., drawings No. E-41, E-42, E-43, and Sargent and Lundy standard, Standard STD-EA-176.

   Contrary to the collective requirements identified above:

   a. Vertical cable tray fire stops between floors were not installed.

   b. Fire stops in the Reactor Confinement Building and Diesel Generator Room vertical cable risers were not installed.

c. The fire stops for horizontal cable trays were not installed as specified, in that, none of the fire stops were found to be completed units.

d. Ventilation openings in which the vent duct passes into the battery room were not sealed.

e. The fiber fill has not been installed in conduits passing through the auxiliary electrical equipment and switchgear room walls.

f. The fire barrier installed in the bottom of the penetration into the auxiliary electrical equipment panel floor was not consistent with Specification 1-N-2 in that the material requirements were not maintained.

g. Separation of test cables in the cable spreading room has not been maintained.

h. Material of flammable potential was found to be located in the cable spreading room.

i. The battery room door into the 480 volt vital switchgear room was found to be open.

2. Technical Specifications, Administrative Controls (AC), Nos. AC 7.3 and AC 7.6, collectively require "corrective action" and "reporting" in the event of abnormal occurrences.

Technical Specification No. 2.1 defines situations, circumstances, or incidents which are considered to be abnormal occurrences.

Contrary to the above, following failure of the 1A Diesel Generator on October 18, 1974, which constituted an abnormal occurrence, per TS No. 2.1(f), neither the required action nor reporting was accomplished.

3. 10 CFR Part 50, Appendix B, Criterion V, INSTRUCTIONS, PROCEDURES, AND DRAWINGS, states, in part, that: "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures or drawings."

AUG 27 1975

The Fort St. Vrain Administrative Procedure No. ADM-12 requires that administrative approval be given prior to performance of maintenance activities.

Section 6.1 of the Fort St. Vrain Quality Assurance Procedure No. 1200 states that: "A General Procedure (IP) shall be prepared to cover all types or routine maintenance and repair activities."

Technical Specification No. 7.5.(b) requires that maintenance procedures shall be developed prior to implementation of safety related maintenance activities.

Contrary to the above requirements:

Procedures had not been developed, and administrative approval had not been given, for 13 of 18 maintenance activities reviewed by the inspector during this inspection. These maintenance activities are identified in Table 1, attached.

4. 10 CFR Part 50, Appendix B, Criterion XVI, CORRECTIVE ACTION, states, in part, that: "Measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected."

   Contrary to the above, plant personnel have not responded to, or taken corrective steps, relative to deficiencies in implementation of plant administration and maintenance requirements, called to their attention following a quality assurance audit performed on May 22-24, 1974.

5. Technical Specification No. 7.5(e) states that temporary changes may be made in standard operating and surveillance test procedures with the concurrence of the shift supervisor and one other person holding a senior operator license, and that such changes be documented and subsequently approved by the Plant Operations Review Committee. Final approval or disapproval will be by the Superintendent-Operations.

   Contrary to the above requirements:

   a. Standard Operating Procedure (SOP) No. 42, was changed on April 16, 1975, without the concurrence of a shift supervisor and a licensed senior reactor operator, and without review by the Plant Operations Review Committee and final approval or disapproval by the Superintendent-Operations.

b. Surveillance Test Procedure No. 5.2.2.A-X, was changed on December 13, 1973, without the concurrence of a shift supervisor and a licensed senior reactor operator, and without review by the Plant Operations Review Committee and final approval or disapproval by the Superintendent-Operations.

6. Technical Specification No. 7.1.3.d.6 requires that the Nuclear Facility Review Committee: "Investigate all reported instances of alleged violations of Technical Specifications, AEC Regulations, License requirements, internal procedures or instructions, and abnormal occurrences or performance of plant equipment anomalies."

Contrary to the above, the violations of requirements, listed below, identified by the licensee's QA organization, were not investigated by the Nuclear Facility Review Committee.

a. Violation of security and access control requirements (Quality Assurance Deficiency Report No. QADR-113).

b. Violations of Internal Work Procedure No. 1, Material Control (Quality Assurance Deficiency Report No. QADR-116 and 117).

c. Violations of QA Procedure No. 1100, and Administrative Procedure No. ADM-14, involving failure to develop calibration procedures for three of 16 Class I instruments.

7. Technical Specification No. AC 7.1.3.d.4 requires that the Nuclear Facility Safety Committee conduct audits no less than semi-annually of facility operations for compliance with internal rules, procedures, regulations, and license requirements, including Technical Specifications.

Contrary to the above requirement, semi-annual audits were not performed between December 1973 and April 1975.

8. Technical Specification No. AC 7.1.3.d.12 requires that the Nuclear Facility Safety Committee review proposed tests and experiments, and their results.

Contrary to the above, a test identified as Gulf Atomic RT 320, dated December 20, 1974, was conducted without prior review by the Nuclear Facility Safety Committee.

9. 10 CFR Part 50, Appendix B, Criterion III, DESIGN CONTROL, states, in part, that: "Measures shall be established to assure that applicable regulatory requirements and the design basis, as defined in Part 50.2 and as specified in the license application

for those structures, systems, and components to which this appendix applies are correctly translated into specifications, drawings, procedures, and instructions. The design control measures shall provide for verifying or checking the adequacy of design, such as the performance of design reviews by the use of alternate or simplified calculation methods, or by the performance of a suitable testing program."

The Final Safety Analysis Report, Appendix C, Table 1.4-1 and Section 1.4.5, collectively require that the plant Reserve Shutdown System be designed and constructed in accordance with specified seismic criteria.

Contrary to the above, the helium bottles used to operate the plant Reserve Shutdown System were not subjected to seismic criteria design review. In addition, the helium bottles were not restrained to maintain seismic integrity in the event of seismic disturbances.

10. Technical Specification No. AC 7.5.d requires that the Plant Operations Review Committee shall review surveillance testing procedures.

Contrary to the above requirement, although a number of the personnel assigned to the Plant Operations Review Committee reviewed surveillance testing procedures on an individual basis during the period of December 21, 1973, to December 10, 1974, none of the procedures, which were issued for use, received review by the required Plant Operations Review Committee Quorum. Moreover, reviews were performed on an individual basis ... as opposed to a meeting quorum activity.

DEFICIENCIES

I. 10 CFR Part 50, Appendix B, Criterion XVII, QUALITY ASSURANCE RECORDS, states, in part, that: "Sufficient records shall be maintained to furnish evidence of activities affecting quality. The record shall include at least the following: Operating logs and the results of reviews, inspections, tests, audits, monitoring of work performance, and materials analyses."

The Fort St. Vrain Quality Assurance Procedure No. QAP-1200, Section 7.0, requires that records exist to document the fact that required inspections of nuclear Class 1 maintenance activities have been performed by inspection personnel.

The Fort St. Vrain Administrative Policy No. OP-06 states that: "When any system or portion of a system is in operation, the log sheets provided shall be filled out in their entirety. For those data blocks provided for equipment not in operation, a "No" shall be recorded."

Contrary to the above requirements:

a. Records did not exist to demonstrate performance of required inspection of 13 of 18 safety related maintenance activities reviewed by the inspector.

b. Entries in the Plant Protection System logs 1 and 2 were not completed as required for the dates of April 10 and 12, 1975, and the Reactor Building Log No. 1 contained incomplete entries for the dates of April 1, 11 through 18, and 21, 1975.

2. 10 CFR Part 50, Appendix B, Criterion XI, TEST CONTROL, states, in part, that: "Test results shall be documented and evaluated to assure that test requirements have been satisfied."

The Fort St. Vrain Administrative procedure No. ADM-12 and Quality Assurance Plan No. QAP-1200, collectively require post maintenance testing, or test operations, prior to returning a safety related component or system to service. Quality Assurance Plan No. QAP-1200 also requires documentation of such tests.

Contrary to the above requirements, records were not available relative to functional tests performed prior to returning a system/component to normal service, following six of 18 safety related maintenance activities reviewed by the inspector.

3. Technical Specification No. AC 7.6(c) specifies the scope and applicability of safety related maintenance activities required to be reported to the Director, Division of Reactor Licensing, on a semi-annual basis and identifies six specific areas of required information.

Contrary to the above requirements, the Fort St. Vrain semi-annual report, dated January 1975, did not contain information relative to safety related maintenance performed during the last six months of 1974.

4. 10 CFR Part 50, Appendix B, Criterion XVII, QUALITY ASSURANCE RECORDS, states, in part, that: "Sufficient records shall be maintained to furnish evidence of activities affecting quality.

The record shall include at least the following: Operating logs and the results of reviews, inspections, tests, audits, monitoring of work performance, and materials analyses."

The Fort St. Vrain Quality Assurance Plan QAP-1200, and Quality Assurance instruction No. QAI-11, establish requirements for the inspection of safety related maintenance activities.

Contrary to the above requirements, 18 safety related maintenance activities, identified in Table 1, attached, were performed between June of 1974 and April of 1975, and in all 18 cases one, or more, of the required quality assurance records were missing.

5. 10 CFR Part 50, Appendix B, Criterion III, DESIGN CONTROL, requires in part that: "The design control measures shall provide for verifying or checking the adequacy of design, such as by the performance of design reviews... Design changes including field changes, shall be subject to design control measures commensurate with those applied to the orignial design..."

10 CFR Part 50.59, CHANGES, TESTS AND EXPERIMENTS, states in Section (a)(1), that: "The holder of a license ... may make changes in the facility as described..." Section (b) of part 50.59 states, in part, that: "The licensee shall maintain records of changes in the facility... These records shall include a written evaluation which provides the basis for the determination that the change...does not involve an unreviewed safety question."

Contrary to the collective requirements above, records were not available to establish that: (1) a change design review or (2) a safety analysis, had been performed relative to:

a. Modification of exhaust air damper pneumatic controls on January 21, 1975 (temporary Change Request No. TCR-1-48)

b. Modification of the PPS on March 15, 1975, (Temporary Change Request No. TCR-3-40)

c. The addition of fill lines to the constant leg of the Pelton Cavity level alarms on March 23, 1974 (Temporary Change Request No. TCR-3-54).

AUG 27 1975

This notice is sent to you pursuant to the provisions of Section 2.201 of the NRC's Rules of Practices, Part 2, Title 10, Code of Federal Regulations. Section 2.201 requires you to submit to this office, within twenty (20) days of the date of this notice, a written statement of the explanation in reply, including, 1) corrective actions which have been taken by you and the results achieved, 2) corrective actions which will be taken to avoid further items of noncompliance, and 3) the date when full compliance will be achieved.

With regard to the above, Item No. 10 in the enclosed Appendix A, dealing with activities of the Plant Operating Review Committee, the inspector determined prior to the conclusion of the April 17-24 inspection that you had taken the necessary corrective action. Consequently, in your reply to this Notice, comment relative to Item No. 10 is not required.

In addition to the statement of explanation required by Section 2.201, in your reply you are requested to comment in terms of steps you have taken, or plan to take, to resolve questions raised by the inspector during the April 17-24 inspection, which are discussed as follows:

1. Following installation of the knock-out pot for the Buffer/Helium driers, the level switch alarm was not calibrated. This level alarm switch appears to be Nuclear Class I, and should have been calibrated to assure reliability following installation.

2. Technical Specification No. 5.0 SURVEILLANCE REQUIREMENTS, designed to assure the capability to control the reactivity and temperature of the reactor core, requires, in Specification No. SR-5.1.2.d, that operable reserve shutdown hoppers shall have an actuating bottle pressure equal to, or greater than, 1500 psig. Inconsistent with the intent of this requirement, you have approved and issued a surveillance procedure (No. SP 5.1.2.b.d) which permits actuating bottle low pressure alarm switches to be set as low as 1470 psig.

FOR THE NUCLEAR REGULATORY COMMISSION

J. G. Davis, Deputy Director
for Field Operations
Office of Inspection and Enforcement

AUG 27 1975

TABLE I

MAINTENANCE ACTIVITIES REVIEWED

MAINTENANCE ACTIVITY	ADMIN APPROVAL	APPROVED PROCEDURE	INSPECTED	FUNCTIONAL TEST	QA RECORDS
PCRV rupture disc replaced with dummy	No	No (1)	Yes	NO (2)	No
Repaired wiring error in accumulator circuit	No	No	No	Yes	No
Cleaned orifice valve and seals in CRD's	Yes	Yes	Yes	Yes	No
Replaced CRD Penetration Connector	No	No (1)	No (2)	Yes	No
Fuel Block Paint Removal	No	No	No (2)	NA	No
Replaced valve PCV 11258 in reserve SD system	No	No	No (2)	Yes	No
Rewired Electromatic Relief Valve 22168	Yes	NA	No (2)	No (2)	No
Adjusted Trip Point of Power Range Channels #3 and #8	No	No	No (2)	Yes	No
Replaced Coil and Relay in 1A PHC (Purification Compressor)	No	No	No (2)	No (2)	No
Replacement of Porcelain Insulators in Connectors	Yes	Yes	Yes	Yes	No (3)
Repaired Al Bus in LC 1A	Yes	Yes	Yes	Yes	No

AUG 27 1975

MAINTENANCE ACTIVITY	ADMIN APPROVAL	APPROVED PROCEDURE	INSPECTED	FUNCTIONAL TEST	QA RECORDS
D/G Trip Mechanism Inspector and Repair	No	No	No (2)	No (2)	No
Inspection of 480 V Breaker in Emergency Power Distribution	Yes	Yes	No (2)	No (2)	No
Replaced Contractor for D/G Hotstarts	No	No	No (2)	No (2)	No (3
Replaced HEPA Filters	No	No	Yes	Yes	No
Modified Emergency Feedwater Control Logic	No	No (1)	No (2)	Yes	No
Replaced Logic Board for Loop Shutdown Logic	No	No (1)	No (2)	Yes	No (3
Replaced Logic Board for Circulator Shutdown Logic	No	No (1)	No (2)	Yes	No (3

(1) Procedure used, but not approved by Plant Superintendent (now called Superintendent, Nuclear Production) as per ADM-12.
(2) Licensee representatives indicated that these activities were inspected and tested, but not documentation exists to verify same.
(3) Only an equipment history card entry was made.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

AUG 29 1975

Maine Yankee Atomic Power Company
Attention: Mr. G. Carl Andognini
Assistant to Vice President
20 Turnpike Road
Westborough, Massachusetts 01581

License No. DPR-36
Inspection No. 75-14
Docket No. 50-309

Gentlemen:

This refers to the inspection conducted by Mr. J. Streeter of this office on August 21-22, 1975 at the Maine Yankee Nuclear Power Plant, Wiscasset, Maine of activities authorized by NRC License No. DPR-36 and to the discussions of our findings held by Mr. Streeter with Mr. Frizzle of your staff at the conclusion of the inspection, and to a subsequent telephone discussion between Mr. Streeter and Mr. Moody on August 25, 1975.

Areas examined during this inspection are described in the Office of Inspection and Enforcement Inspection Report which is enclosed with this letter. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector.

Based on the results of this inspection, it appears that one of your activities was not conducted in full compliance with NRC requirements, as set forth in the Notice of Violation, enclosed herewith as Appendix A. This item of noncompliance has been categorized into the levels as described in our correspondence to you dated December 31, 1974. This notice is sent to you pursuant to the provisions of Section 2.201 of the NRC's "Rules of Practice", Part 2, Title 10, Code of Federal Regulations. Section 2.201 requires you to submit to this office, within twenty (20) days of your receipt of this notice, a written statement or explanation in reply including: (1) corrective steps which have been taken by you and the results achieved; (2) corrective steps which will be taken to avoid further items of noncompliance; and (3) the date when full compliance will be achieved.

In accordance with Section 2.790 of the NRC's "Rules of Practice", Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosures will be placed in the NRC's Public Document Room. If this report contains any information that you (or your contractor) believe to

be proprietary, it is necessary that you make a written application within 20 days to this office to withhold such information from public disclosure. Any such application must include a full statement of the reasons on the basis of which it is claimed that the information is proprietary, and should be prepared so that proprietary information identified in the application is contained in a separate part of the document. If we do not hear from you in this regard within the specified period, the report will be placed in the Public Document Room.

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

B Buchanan

for Robert T. Carlson, Chief
Facility Construction and Engineering
Support Branch

Enclosures:
1. Appendix A, Notice of Violation
2. IE:I Inspection Report No. 75-14

cc: D. Moody, Plant Superintendent
E. W. Thurlow, President

bcc:
IE Chief, FS&EB
IE:HQ (4 cys ltr, 5 cys report)
IE Files
Central Mail & Files
Directorate of Licensing (4 cys ltr, 13 cys report)
Regulatory Standards (1 cy ltr, 3 cys report)
PDR
Local PDR
NSIC
TIC
REG:I Reading Room
Region Directors (II, III, IV)(Report Only)
ELD
State of Maine

License No. DPR-36

APPENDIX A

NOTICE OF VIOLATION

Based on the results of an NRC inspection conducted on August 21-22, 1975, it appears that certain of your activities were not conducted in full compliance with conditions of your NRC Facility License No. DPR-36 as indicated below.

Contrary to 10 CFR 50.59, firestops were not installed as described in FSAR Section 8.3.7.7 and safety evaluations of these changes were not made and documented.

This Infraction had the potential for causing or contributing to an occurrence related to health and safety.

E:I Form 12
Jan 75) (Rev)

U. S. NUCLEAR REGULATORY COMMISSION

OFFICE OF INSPECTION AND ENFORCEMENT

REGION I

E. Inspection Report No: 50-309/75-14

Docket No: 50-309

icensee: Maine Yankee Atomic Power Company

License No: DPR-36

20 Turnpike Road

Priority:

Westborough, Massachusetts 01581

Category: C

Safeguards Group:

ocation: Wiscasset, Maine 04578

ype of Licensee: PWR, 2440 MWt (CE)

ype of Inspection: Special, Announced

ates of Inspection: August 21-22, 1975

ates of Previous Inspection: July 7-8, 1975

Reporting Inspector: J. F. Streeter, Reactor Inspector — 8/28/75 DATE

Accompanying Inspectors: None — DATE

DATE

DATE

Other Accompanying Personnel: None — DATE

Reviewed By: R. C. Haynes, Senior Reactor Inspector, Engineering Support Section, Facility Construction and Engineering Support Branch — 8/28/75 DATE

SUMMARY OF FINDINGS

Enforcement Action

A. Items of Noncompliance

1. Violations

None

2. Infractions

a. Firestop Discrepancies and Safety Evaluation

Contrary to 10 CFR 50.59, firestops were not installed as described in FSAR Section 8.3.7.7 and safety evaluations of these changes were not made and documented. (Detail 3.a)

3. Deficiencies

None

B. Deviations

None

Licensee Action on Previously Identified Enforcement Items

Not inspected

Design Changes

Not inspected

Unusual Occurrences

None identified

Other Significant Findings

A. Current Findings

1. Acceptable Areas

Inservice Inspection Data Review. (Detail 4)

2. Unresolved Items

a. Firestop Change Notification in Semiannual Report. (Detail 3.b)

b. Evaluation of Slots in Outer Penetration Room Area. (Detail 3.e)

3. Licensee Identified Items of Noncompliance

None

B. Status of Previously Identified Unresolved Items

1. The following items have been resolved:

a. Sealing of Protected Cable Tray Room wall Penetrations 11, 20, and 21. (Detail 3.a)

b. Sealing of Protected Cable Tray Room wall Penetration 1. (Detail 3.a)

c. Replacement of Lower MCC Room floor Penetration 186. (Detail 3.a)

d. Sealing of Conduit Sleeves Carrying Power and Control Cables Between the Switchgear and Protected Cable Tray Rooms. (Detail 3.a)

2. More information is required to resolve the following items:

a. Plant Survey of Control Room and Cable Vault and Associated Sealing. (Detail 3.c)

b. Invokement of Facility Requirements for Firestops. (Detail 3.d)

Management Interview

At the conclusion of the inspection, the inspector held a meeting at the site with Mr. C. D. Frizzle, Assistant to Plant Superintendent, to discuss the inspection findings. The inspection findings were discussed with Mr. D. E. Moody, Plant Superintendent, prior to the exit meeting. Mr. Moody and Mr. Wood, Assistant Plant Superintendent, were unable to attend the meeting because of their involvement in labor negotiations.

The following summarizes the items discussed:

A. Purpose of the Inspection. (Detail 2.b)

B. Review of Previous Unresolved Items as identified in "Status of Previously Identified Unresolved Items" section of this report.

C. Item of Noncompliance - Firestop Discrepancies. (Detail 3.a)

D. New Unresolved Items. (Details 3.b and 3.e)

E. Inservice Inspection Data Review. (Detail 4)

F. Status of Licensee's Response to IE Bulletins 75-04 and 75-04A. (Detail 3.f)

DETAILS

1. Persons Contacted

Mr. W. G. Bizarro, Lead Electrician
Mr. W. M. Fournier, Training Coordinator
Mr. C. D. Frizzle, Assistant to Plant Superintendent
Mr. D. E. Moody, Plant Superintendent
Mr. R. L. Painter, Maintenance Foreman
Mr. R. F. Prouty, Maintenance Supervisor
Mr. B. A. Tuthill, Engineering Assistant
Mr. R. Wilkinson, Electrician
Mr. E. C. Wood, Assistant Plant Superintendent

2. General

a. Plant Status

The plant was operating at approximately 99.5% power during the inspection.

b. Inspection Purpose

The inspector stated that the primary purpose of the inspection was to review the licensee's progress in resolving the items identified in Region I Inspection Report 50-309/75-07 and to review other licensee activities related to IE Bulletins 75-04 and 75-04A. The inspector stated that the secondary purpose of the inspection was to examine in-service inspection records to determine if all records were signed by properly qualified individuals.

3. Firestops

References:
(1) Region I Inspection Report 50-309/75-07
(2) IE Bulletins 75-04 and 75-04A
(3) Maine Yankee FSAR, Section 8.3.7.7
(4) Licensee letters to Region I in response to Reference (2) dated April 24, 1975 (WMY 75-43), May 28, 1975 (WMY 75-50), June 24, 1975 (WMY 75-65), and August 6, 1975 (WMY-84)

a. Firestop Discrepancies and Safety Evaluation

As stated in the FSAR (Section 8.3.7.7), "Fire stops are provided around trays and in sleeves which penetrate areas

where carbon dioxide protection is used." Section 8.3.7.6 states that "Carbon dioxide discharges into and totally floods the cable vault, the penetration rooms, and the protected and unprotected cable tray rooms in the event of a fire in those areas."

The penetration room area outside the reactor containment is defined by the licensee to include both outer penetration rooms and the two (upper and lower) Motor Control Center Rooms directly below the penetration rooms. This area description is consistent with construction drawings FE-35A, FE-32C, FE-46G, FE-37B, and FSAR Figures 5.1-1 and 5.1-2 which show communication between the subareas via floor slots (12" x 18") and a circular stairway. The penetration room area as defined by the licensee was designed to simultaneously flood all subareas with CO_2 rather than individually sealing off and flooding the subareas (MCC rooms and outer penetration rooms).

The licensee requested guidance from his architect-engineer during plant construction in 1972 on what materials were to be used as firestops. The A-E informed the licensee that Flamemastic 71A was acceptable as firestop material but duct seal was not. (Duct seal was acceptable for barriers other than firestops.)

The inspector stated that several items identified by him as Unresolved Items during Region I Inspection 50-309/75-07 constituted changes to the facility described in the FSAR in that certain firestops were found not to meet the above criteria. The licensee stated that a safety evaluation in accordance with 10 CFR 50.59 was not made prior to these changes. The discrepant items & additional items identified by the licensee and the inspector subsequent to Report 50-309/75-07 are as follows:

(1) The firestops for wall Penetrations 11, 20, and 21 in the Protected Cable Tray Room were composed of a combination of Flamemastic 71A and duct seal. (These items were identified in Report 50-309/75-07, Detail 4(1). The inspector verified that the licensee had corrected the items by removing the duct seal and replacing it with Flamemastic 71A.)

(2) The firestops for wall Penetration 1 in the Protected Cable Tray Room had only asbestos rope without Flamemastic 71A applied. (This item was identified in Report 50-309/75-07, Detail 4(2). The inspector verified that the licensee had corrected this item by applying Flamemastic 71A.)

(3) The firestop for floor Penetration 186 had been removed. (This item was identified in Report 50-309/75-07, Detail 4(3). The inspector verified that the licensee had corrected this item by applying Flamemastic 71A.)

(4) Firestops were never installed in sleeves carrying control and power cables between the switchgear rooms and cable tray rooms and between the upper and lower Reactor Containment MCC rooms. (This item was identified in Report 50-309/75-07, Detail 4(5). The licensee performed a safety evaluation per 10 CFR 50.59 that included the lack of these firestops and concluded that they need not be installed.)

(5) Two conduits between the Cable Vault and the lower level of the Primary Auxiliary Building were not sealed and other Cable Vault sleeves were sealed with duct seal. (This item was identified in Report 50-309/75-07, Detail 4(6) and has been resolved by sealing the conduits with duct seal. The use of duct seal for Cable Vault sleeves was reviewed in a PORC meeting on August 25 and it was determined that no unreviewed safety question exists due to such use.)

(6) A hole (∿ 4" OD) recently drilled in the wall was unsealed in the Upper MCC room. (This was identified during a firestop tour on August 21. The hole was sealed with Flamemastic 71 prior to the completion of the inspection.)

(7) A cable tray between the Unprotected Cable Tray Room and the turbine area was not properly firestopped. (This item was resolved prior to the end of the inspection by applying Flamemastic 71A around an asbestos board.)

The inspector asked if a safety evaluation had been made after the discrepancies were identified to determine if they constituted an unreviewed safety question as defined in 10 CFR 50.59 (a)(2). The licensee stated that a 10 CFR 50.59 evaluation had been made for item 2.a(4) and provided the inspector with a copy of a memo containing the evaluation. The licensee stated that the remaining discrepancies had been reviewed by plant supervisory personnel with the conclusion that no unreviewed safety question existed; however, the review and conclusion reached were not documented in facility records. The inspector discussed the discrepancies with the Plant Superintendent, Assistant Plant Superintendent, and Assistant to the Plant Superinendent and determined from the discussion that an undocumented safety evaluation had been made. The licensee stated that a special Plant Operations Review Committee meeting would be convened on Monday, August 25, to document the evaluation. (The inspector confirmed in a telephone conversation on August 25 that the PORC had performed a formal review per 10 CFR 50.59 and concluded that no unreviewed safety questions existed due to the firestop discrepancies.)

The inspector stated that failure to change or construct the firestops as described in FSAR Section 8.3.7.7 without having first made a safety evaluation is contrary to the provisions of 10 CFR 50.59. The inspector stated that failure to document the safety evaluation made after the firestop discrepancies were identified was also contrary to 10 CFR 50.59. These findings constitute an Item of Noncompliance and are considered to be an Infraction.

b. <u>Licensee and Architect-Engineer Interpretation of Firestop Criteria</u>

As was mentioned under Detail 2.a above, the licensee requested guidance on firestops from his A-E in 1972 during plant construction. Correspondence from the A-E to the licensee appears to interpret the FSAR firestop criteria as follows:

- Flamemastic 71A should be used to seal sleeves as follows:

  Walls of the Switchgear Rooms.
  Walls of the Control Room.
  Walls and Floors of the Cable Tray Rooms.
  Walls and Floors of the Reactor Containment MCC Rooms.
  Walls and Floors of the Reactor Containment Outer Penetration Rooms.

- Floors or walls bearing on or against earth are not fire barriers.

- Sleeves carrying power and control cables between the switchgear rooms and cable tray rooms are not required to be sealed since the switchgear cubicles act as a fire barrier.

- The power bus ducting entering the switchgear rooms is sealed by fiberglass plate inside and Transite outside.

This guidance has since been endorsed by the plant and is being incorporated into procedure MYM-5-108, "Cable Penetration Sealing." For barriers that are required to be installed for reasons other than fire, duct seal is recommended by the licensee and his A-E.

The interpretations described above are consistent with FSAR firestop requirements except that:

- The above interpretations do not address the sleeves in the ceiling of the cable tray rooms, whereas the FSAR requires firestops in these sleeves. (The licensee has reviewed this practice per 10 CFR 50.59 and concluded it to be acceptable. The licensee now requires these sleeves to be sealed with duct seal.)

- The above interpretations do not address the Cable Vault boundaries, whereas the FSAR requires sleeves in these boundaries to have firestops. (The licensee reviewed this practice per 10 CFR 50.59 in a PORC meeting on August 25 and considered it to be acceptable. The licensee now requires one end or the other of sleeves penetrating the Cable Vault to be sealed with either Flamemastic 71A or duct seal.)

The licensee stated that plant safety evaluations performed in accordance with 10 CFR 50.59 dealing with firestops would be discussed in the next semiannual report. The licensee also stated that the firestop criteria for Maine Yankee will be delineated in that report. This is an Unresolved Item pending Region I receipt of that report.

c. Plant Sealing Surveys

The licensee is in the process of conducting surveys of the Control Room and Cable Vault to assure that all Control Room floor penetrations are sealed with duct seal and that all Cable Vaults penetrations are sealed at one end with either duct seal or Flamemastic 71A. The surveys and associated sealing will be complete by August 29. From the inspector's review of the present sealing status, the inspector concluded that the habitability of the Control Room or the CO_2 protection of the Cable Vault are not adversely affected.

These items, originally identified in Reference (1), Details 4(4) and 4(6), remain Unresolved Items pending completion of the licensee's surveys and sealing.

d. Invokement of Facility Requirements for Firestops

The inspector reviewed a draft procedure, MYM-5-108, "Cable Penetration Sealing," that addresses the issue of restoring firestops and boundary seals disturbed during maintenance operations. The procedure will be approved by September 30.

The licensee has issued guidance in the form of an administrative directive to accomplish the repairs necessary to meet the FSAR firestop criteria. The inspector verified by questioning of the personnel performing the repair that they were knowledgeable in the proper repair techniques.

This item, originally identified in Reference (1), Detail 5, remains an Unresolved Item pending final licensee approval of the procedure.

e. Evaluation of Slots in Outer Penetration Room Area

During a firestop survey on August 21, the inspector observed some cables passing loosely through slots (12" x 18") between the subareas (Lower MCC Room, the Upper MCC Room, and the Reactor Containment Outer Penetration Rooms) of the penetration room area. The cables were in trays up to the floors and after they passed through the floors but were not supported by sleeves or trays as they passed through the floors.

The inspector verified by examining construction drawings that the slots were designed in the floor. The licensee could not readily produce documentation to show the cable loading of the slots. The licensee stated that the slots and their cable loadings would be reviewed by an engineer next week.

This is an Unresolved Item pending receipt and review by the inspector of additional information from the licensee.

f. Status of Licensee's Response to IE Bulletins 75-04 and 75-04A

The inspector reviewed the reports listed in Reference (4). The licensee has been sending monthly summary reports in accordance with IE Bulletin 75-04A detailing plant progress in responding to the issues set forth in IE Bulletins 75-04 and 75-04A. The final licensee response to the bulletins is projected for September 30.

4. Inservice Inspection Data Review

A Region I inspector recently determined at another facility that an individual who was certified as a Level II UT technician was performing ultrasonic examinations as a Level II (as described by SNT-TC-1A) when his qualifications only justified him being certified as a Level I. It was determined by Region I that the same individual had performed ultrasonic examinations at Maine Yankee during the recent inservice inspection program.

The inspector reviewed all of the raw data sheets to determine if the individual in question had signed any UT examinations as a Level II technician without having another Level II as a cosigner. The inspector found that, with the exception of one weld examination data sheet concerning five welds on No. 1 main feedwater line, the weld records signed by the individual in question were cosigned by a valid Level II technician.

The one weld data sheet in question was signed only by the individual not qualified as a Level II. Consequently, these results would not be acceptable in satisfying the licensee's inservice inspection program requirements.

The licensee stated that these tests would be repeated by appropriately qualified personnel during the next in-service inspection.

Dresden

HQ Seyfrit

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
799 ROOSEVELT ROAD
GLEN ELLYN, ILLINOIS 60137

AUG 2 9 1975

Commonwealth Edison Company
ATTN: Mr. Byron Lee, Jr.
Vice President
P.O. Box 767
Chicago, Illinois 60690

Docket No. 50-237
Docket No. 50-249

Gentlemen:

This refers to the inspection conducted by Mr. T. L. Harpster of this office on July 21 and 22, 1975, of activities at the Dresden Station authorized by NRC Licenses No. DPR-19 and No. DPR-25, and to the discussions of our findings with Messrs. Butterfield and Jurecki at the conclusion of the inspection. A meeting, attended by Mr. Palmer and other members of the Commonwealth Edison Production and Engineering staff, and Messrs. Harpster, Little and Knop of this office, was held on August 14, 1975, at the Commonwealth Edison Company offices to discuss the findings of this inspection. The inspection was conducted in connection with our headquarters review and evaluation of the findings of the May 12, 1975, Dresden inspection.

A copy of our report of this inspection is enclosed and identifies the areas examined. Within these areas, the inspection consisted of interviews with Commonwealth Edison personnel and observations by the inspector.

No items of noncompliance with NRC requirements were identified within the scope of this inspection; however, certain activities identified during this inspection appear to be a deviation from Commonwealth Edison Standards. The item is identified under Other Significant Findings in the Summary of Findings section of the enclosed inspection report. Please advise us in writing within 20 days of the corrective action you have taken or plan to take, showing the estimated date of completion, with regard to this deviation.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this notice, the enclosed inspection report, and your response to this notice will be placed in the NRC's Public Document Room. If this report contains any information that you or your contractors believe to be proprietary, it

AUG 2 9 1975

is necessary that you make a written application to this office, within twenty days of your receipt of this notice, to withhold such information from public disclosure. Any such application must include a full statement of the reasons for which it is claimed that the information is proprietary, and should be prepared so the proprietary information identified in the application is contained in a separate part of the document. Unless we receive an application to withhold information or are otherwise contacted within the specified time period, the written material identified in this paragraph will be placed in the Public Document Room.

Should you have any questions concerning this inspection, we will be glad to discuss them with you.

Sincerely yours,

Gaston Fiorelli, Chief
Reactor Operations Branch

Enclosure:
IE Inspection Reports No.
050-237/75-21 and No.
050-249/75-18

cc w/encl:
B. Stephenson
Station Superintendent

bcc w/encl:
PDR
Local PDR
NSIC
TIC
Anthony Roisman, Esq., Attorney

U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION III

Report of Operations Inspection

IE Inspection Report No. 050-237/75-21
IE Inspection Report No. 050-249/75-18

Licensee: Commonwealth Edison Company
P.O. Box 767
Chicago, Illinois 60690

Dresden Nuclear Power Station,
Units 2 and 3
Morris, Illinois

Licenses No. DPR-19
and No. DPR-25
Category: C

Type of Licensee: GE BWR 809 MWe

Type of Inspection: Special, Announced

Dates of Inspection: July 21-22 and August 14, 1975

Principal Inspector: T. L. Harpster
T. L. Harpster

8/20/75
(Date)

Accompanying Inspector: None

Other Accompanying Personnel: None

Reviewed By: W. S. Little, Senior Inspector
Nuclear Support Operations Branch

8/27/75
(Date)

SUMMARY OF FINDINGS

Inspection Summary

Inspection on July 21, 22, and August 14 (75-21) (75-18): Followup inspection of actions taken with respect to IE Bulletins 75-04 and 75-04A; meeting with members of Commonwealth Edison Production and Engineering staff to discuss the schedule for installation and repair of fire stops. One deviation was identified concerning licensee commitments to seal electrical penetrations.

Enforcement Items

None.

Licensee Action on Previously Identified Enforcement Items

Not inspected.

Other Significant Items

A. Systems and Components

None.

B. Facility Items (Plans and Procedures)

None.

C. Managerial Items

None

D. Noncompliance Identified and Corrected by Licensee

None.

E. Deviations

Penetrations were not properly sealed, and fire stops were not installed, contrary to the requirements of the following Commonwealth Edison standards:

1. Cable pan fire stop and air seal through wall (Sargent and Lundy STD-EA-175)

2. Fire stop in cable riser (Sargent and Lundy STD-EA-176)

3. Control board cable entrance seal (Sargent and Lundy STD-EA-179)

4. Method of sealing ducts for all types of cable (C-5192)

F. Status of Previously Reported Unresolved Items

None.

Management Interview

A. The following subjects were discussed at the conclusion of the inspection on July 22, 1975 with Messrs. Butterfield and Jurecki.

1. The inspector summarized the findings of the visual inspection of penetrations. The inspector stated that several instances of failure to meet CE requirements regarding firestops and seals for electrical penetrations had been identified, and that this would be considered a deviation.

   The licensee stated that the Station Nuclear Engineering Department was developing a repair schedule in response to the initial firestop inspection and the actions requested in IE Bulletins 75-04 and 75-04A. (Paragraph 2, Report Details.

2. The inspector stated the combustible material had been removed from the Auxiliary Electric Room since the previous inspection, however combustible material was still found at various locations in the plant. In addition, rags found in two secondary containment penetrations during the previous inspection had not been removed.

   The licensee stated that they were inspecting the plant and removing combustible materials from fire hazard areas. (Paragraph 3, Report Details)

3. The inspector stated that the item regarding cable separation will continue to remain unresolved pending further investigation. (Inspection Report 50-10/75-9, 50-237/75-12, 50-249/75-14)

B. Messrs. Harpster, Little and Knop met with Mr. Palmer and other members of the Commonwealth Edison Production and Engineering staff on August 14, 1975, to discuss Commonwealth Edison's schedule for installation and repair of fire stops at the Dresden, Quad-Cities and Zion stations.

Representatives of the licensee stated that:

1. Sargent and Lundy is presently preparing drawings to be used in the repair of deficient penetrations and installation of firestops for penetrations not covered by existing specifications.

2. Advance purchase orders have been issued for ceramic fiber and flamemastic. The vendors expect no problems in meeting the delivery dates.

3. The work package will be issued to the stations by September 2, 1975. Materials are expected to be on site September 8, 1975. Estimated time for completion of the work is three months.

4. The work package will require a 100% audit of penetrations prior to completion of repairs to make certain that all foreign materials are removed. Repair priority will be given to the Control Room, Cable Spreading Room, etc., in accordance with the safety significance of these areas.

NRC representatives asked to be notified of any changes in this schedule and urged that this work be completed as expeditiously as possible.

REPORT DETAILS

1. Personnel Contacted

B. Stephenson, Plant Superintendent
D. Butterfield, Administrative Assistant
J. Jurecki, Staff Assistant to Maintenance Engineer
J. Brunner, General Engineer

2. Visual Examination

The inspector toured the facility with representatives of the licensee to determine the extent of conformance with SAR commitments and Commonwealth Edison standards relating to firestops and seals for electrical penetrations.

This selective audit identified four groups of nonconforming penetrations. These nonconforming penetrations are considered to be a deviation from the following Commonwealth Edison standards:

a. Cable pan fire stop and air seal through wall (Sargent and Lundy STD-EA-175)

b. Fire stop in cable riser (Sargent and Lundy STD-EA-176)

c. Control Board Cable Entrance Seal (Sargent and Lundy STD-EA-179)

d. Method of sealing ducts for all types of cable (C-5192)

Nonconforming penetrations were identified in the following locations:

a. Control room

b. Auxiliary electric room

c. Cable tunnel

d. Unit 2 battery room

e. Computer room

f. Switchgear room (Bussess 21-24)

g. Turbine building ventilation switchgear room east (Below Unit 3 battery)

h. Turbine building

3. Combustible Materials

a. Rags were found by the inspector in two ducts in the cable tunnel and two penetrations in the secondary containment wall. The rags in the secondary containment penetrations had been identified in a May 12, 1975 inspection (IE Inspection Reports 50-10/75-9, 50-237/75-14, 50-249/75-12), and had not been removed.

b. Wood or masonite boards covered nine horizontal cable tray penetrations in the turbine building. The boards had been identified in the May 12, 1975 inspection, and not not been removed.

c. The licensee stated that they were inspecting the plant and removing combustible materials from fire hazard areas.

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a. The cause of each abnormal occurrence was identified and the details were clearly reported to facility management.

b. The corrective actions described in the reports to prevent recurrence of the events were implemented by the licensee.

c. The abnormal occurrences had been reviewed by the Plant Review Committee.

d. The surveillance requirement (Technical Specification Table 4.1-3) for quarterly sampling of the Waste Gas Decay Tank D was not met for the first quarter of 1975 (item of non-compliance) as reported by the licensee in Abnormal Occurrence Report No. 75-11. Surveillance procedure, SP 202.07 had been implemented to preclude recurrence.

e. System and component failures have been reported to the plant staff for review and properly identified as abnormal occurrences when applicable.

4. IE Bulletin Followup

a. 75-04A "Cable Tray Fire - Browns Ferry"

The information contained in the licensee's final status report dated July 21, 1975 was verified. The following new procedure and revisions to existing procedures have been reviewed, approved and implemented by the licensee as administrative control modifications addressing fire prevention and the effects of fire on plant shutdown cooling systems.

(1) AP-29-Rev 0, "Use and Control of Combustible Materials and Ignition Sources."

(2) AP-3-Rev 3, "Work Request."

(3) M-113-Rev 2, "General Welding Procedure."

(4) D-14-Rev 2, "Loss of Steam Generator Feed."

(5) D-16-Rev 2, "Loss of Decay Heat Removal System."

(6) B-4-Rev 2, "Plant Shutdown and Cooldown."

Cunna

Kirkpatrick

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

SEP 8 1975

Rochester Gas and Electric Corporation
Attention: Mr. Leon D. White, Jr.
Vice President
Electric and Steam Production
89 East Avenue
Rochester, New York 14649

License No. DPR-18
Inspection No. 75-10
Docket No. 50-244

Reference: Your letter dated August 29, 1975
In response to our letter dated August 7, 1975

Gentlemen:

Thank you for informing us of the corrective and preventive actions you documented in response to our correspondence. These actions will be examined during a subsequent inspection of your licensed program.

Your cooperation with us is appreciated.

Sincerely,

James P. O'Reilly

James P. O'Reilly
Director

cc: C. Platt, Plant Superintendent
A. E. Upton, Esquire
T. R. Schuler, QC Engineer

bcc:
IE Chief, FS&EB
IE:HQ (4)
IE Files
Central Mail & Files
Directorate of Licensing (4)
RS
PDR
Local PDR
NSIC
TIC
REG I Reading Room
ELD
State of New York

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