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VPNPD-91-238
NRC-91-070

10 CFR 50.73

July 26, 1991

Document Control Desk
U. S. NUCLEAR REGULATORY COMMISSION
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Washington, DC 20555

Gentlemen:

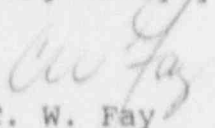
DOCKETS 50-266 AND 50-301
LICENSEE EVENT REPORT 91-007-00
FIRE BARRIER INADVERTENTLY DISABLED
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

Enclosed is Licensee Event Report 91-007-00 for Point Beach Nuclear Plant, Units 1 and 2. This report is provided in accordance with 10 CFR 50.73(a)(2)(i)(B), "...any operation or condition prohibited by the plant's Technical Specifications."

This event occurred following the installation of electrical cabling in safety-related areas. Two fire barrier penetration seals were left in a degraded condition for an extended period of time. Technical Specification 15.3.14.C.1.a requires all fire barrier penetration seals protecting safety-related areas to be operable.

Please contact us if you have any questions on the event or on our corrective actions.

Very truly yours,


C. W. Fay
Vice President
Nuclear Power

Enclosure

Copy to: NRC Resident Inspector
NRC Regional Administrator

JE27

LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 600 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH, IF-630, U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) Point Beach Nuclear Plant, Unit 1										DOCKET NUMBER (2) 0 5 0 0 0 2 6 6				PAGE (3) 1 OF 16	
TITLE (4) Inoperable Fire Barrier Penetration Seals															
EVENT DATE (5)			LER NUMBER (6)				REPORT DATE (7)			OTHER #1					
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME: Point Beach, Unit 1						
0 6	2 6	9 1	9 1	0 0 7	0 0	0 7	2 6	9 1	0 5 0 0 0 2 6 6						
OPERATING MODE (8) N		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5 (Check one or more of the following):													
POWER LEVEL (10) 1 0 0		20.402(b)				20.405(e)				50.73(a)(2)(iv)				73.71(b)	
		20.405(a)(1)(i)				50.36(a)(1)				50.73(a)(2)(v)				73.71(c)	
		20.405(a)(1)(ii)				50.36(a)(2)				50.73(a)(2)(vi)				OTHER (Specify in Abstract below and in Text, NRC Form 306A)	
		20.405(a)(1)(iii)				X 50.73(a)(2)(i)				50.73(a)(2)(viii)(A)					
		20.405(a)(1)(iv)				50.73(a)(2)(ii)				50.73(a)(2)(viii)(B)					
		20.405(a)(1)(v)				50.73(a)(2)(iii)				50.73(a)(2)(ix)					
LICENSEE CONTACT FOR THIS LER (12)															
NAME C. W. Fay, Vice President, Nuclear Power										TELEPHONE NUMBER AREA CODE 4 1 4 2 2 1 - 2 8 1 1					
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)															
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC						
SUPPLEMENTAL REPORT EXPECTED (14)										EXPECTED SUBMISSION DATE (15)		MONTH DAY YEAR			
YES (If yes, complete EXPECTED SUBMISSION DATE)										NO					

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single space typewritten lines) (16)

ABSTRACT

On June 26, 1991, holes were discovered in two fire barrier penetration seals in the walls of the Safety Injection - Containment Spray pump room. The openings measured approximately six by twelve inches in one and six by fifteen inches in the other. PBNP Technical Specification (TS) 15.3.14.C.1.a requires all fire barrier penetration seals protecting safety-related areas to be operable.

The barriers had been opened and temporarily sealed in preparation for an electrical conduit installation. Contrary to PBNP Procedure 3.4.11, "Penetrating Barriers," the temporary Fiberfrax-Durablanket barriers were not reinstalled following the conduit installation. The condition was discovered when the seal installer contractor returned to permanently repair the penetrations.

The contractor provided a fire watch in the area while both barriers were made operable. Both seals have been permanently repaired. All similar barriers disturbed as part of the same installation were inspected and found to be operable. The PBNP engineer responsible for fire barrier penetration seals has reviewed the requirements for working on these components with the personnel responsible for the conduit installation.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (F-530) U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545, AND TO THE PAPERWORK REDUCTION PROJECT (5150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

BACKGROUND

Installation of PBNP Modification Request (MR) 87-121, "Alternate Shutdown Capability," required the routing of cabling throughout many safety-related areas of the plant.

Transco Products, Inc. is retained by WE to handle permanent fire barrier penetrations. They are responsible for the removal of the permanent filler and the placement of a temporary filler in preparation for work and for the permanent repair of the penetration after work is complete.

WE retains Pieper Electric Inc. to provide electrical services, such as routing of cabling. For routing through penetrations, they are responsible for the removal of the temporary barrier, routing of cable or conduit through the penetration, and the temporary resealing of the penetration.

PBNP Procedure 3.4.11, "Penetrating Barriers," controls the process of performing work on barriers and ensures the rating of fire barriers and fire barrier penetration seals is maintained. PBNP Procedure 3.4.11 lists approved temporary barriers as either Kaowool or Fiberfrax-Durablanket.

EVENT DESCRIPTION

On April 1 and April 4, 1991, respectively, Transco removed portions of the permanent seals of penetrations M-7-5-4-N34 and M-7-5-8-N3 in preparation for the routing of cabling associated with MR 87-121. These penetrations are on the north and south walls (respectively) of the Containment Spray - Safety Injection pump room, common to both units. The openings, approximately six by fifteen inches in N34 and six by twelve inches in N3, were temporarily sealed at the time of impairment with a minimum of two inches of Durablanket in accordance with PBNP Procedure 3.4.11.

Pieper subsequently installed cabling through these penetrations in a new three-inch conduit and a new one and one-half inch conduit.

On June 26, 1991, Transco was preparing to permanently repair the penetrations when they discovered that the temporary barrier had not been replaced following installation of the conduits. Transco personnel acted as a fire watch in the area while they temporarily sealed one barrier and commenced permanent repair of the other. Permanent repairs have since been completed on both penetrations.

Between April 1 and June 26, both units were operating at powers up to and including 100%.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 800 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)

DOCKET NUMBER (2)

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Point Beach Nuclear Plant, Unit 1

0 5 0 0 0 2 6 6 9 1 -- 0 0 7 -- 0 0 3 OF 6

TEXT (If more space is required, use additional NRC Form 306A's) (17)

SAFETY ASSESSMENT

For the purpose of fire protection, the Containment Spray - Safety Injection pump room is designated as fire zone 151, which makes up all of fire area 002. Fire area 002 boundaries are of concrete construction with silicon foam penetration seals. The boundaries are three-hour rated. Full area fire detection and wet pipe sprinkler protection are provided in fire area 002 and in adjacent zones in the area of the penetration.

The open penetrations compromised the fire protection integrity of fire area 002, creating the potential for a fire to spread between area 002 and adjacent areas. Penetration N34 is located between fire area 002 and fire zone 142 of fire area 001 to the north. Penetration N3 is located between fire area 002 and fire zone 156, which makes up all of fire area 006, to the south. (See Figure 1.)

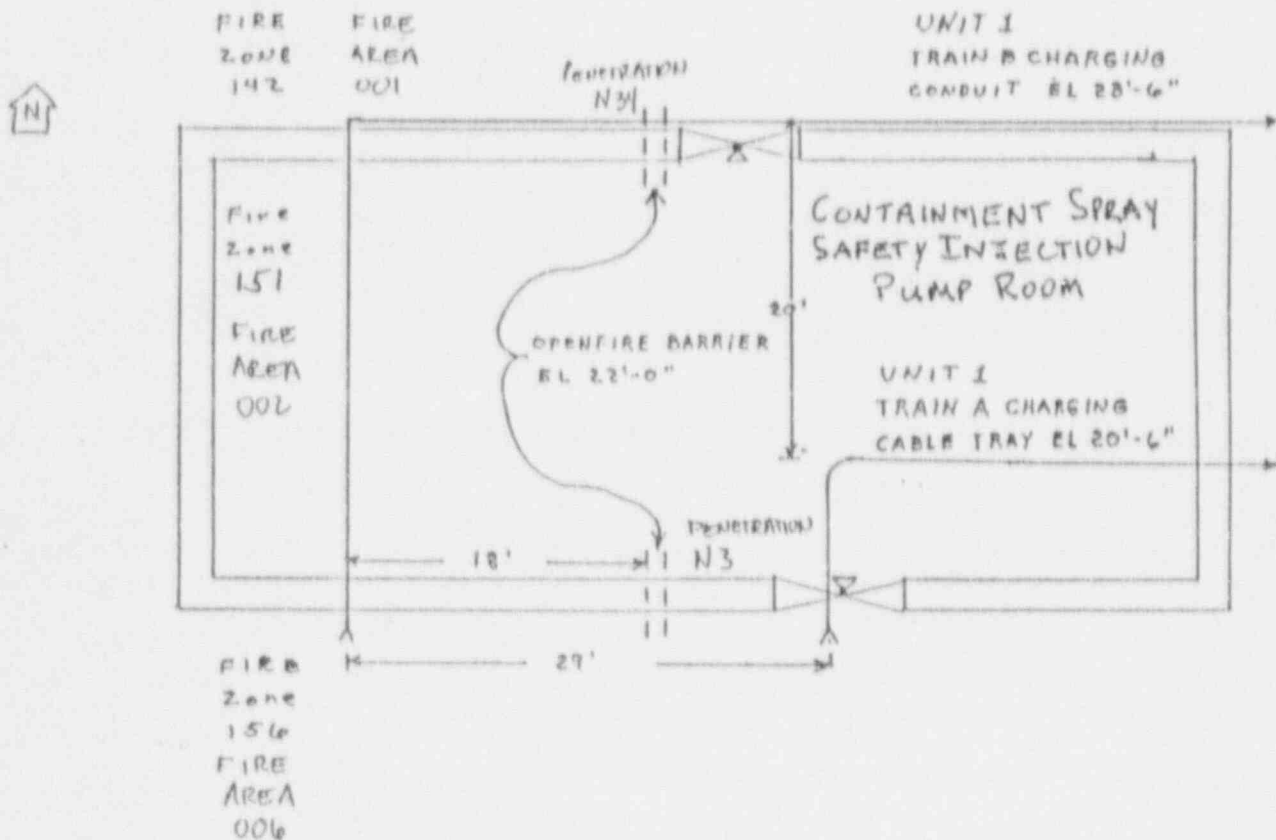


Figure 1

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (F630), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

10 CFR 50 Appendix R dictates that redundant trains of equipment required to put the plant in a safe shutdown condition be protected from failure caused by a single fire. The Appendix R safe shutdown equipment of concern in these areas consists of the charging pump power and control cables for Units 1 and 2.

Unit 1 Train A and B charging pump cables pass through fire areas 002 and 006. Unit 1 Train B cables also pass through fire zone 142. Unit 2 Train A charging pump cables pass through fire areas 002 and 006 and fire zone 142. Unit 2 Train B cables pass through fire zone 142.

The Unit 2 Train B charging pump cables are fire wrapped to provide separation in accordance with Appendix R paragraph III.G.2.c. The opening of penetration N34 does not affect the provided separation. Penetration N3 is not located between Unit 2 cable trains. Therefore, opening of these penetrations does not affect Appendix R separation of Unit 2 charging pump cables.

The following paragraphs provide analysis of the openings for effects on Unit 1 charging pump cable fire separation in accordance with Appendix R, paragraph III.G.2.b.

The open penetration in the south wall of fire area 002 (N3) degraded the fire barrier and provided a possible but unlikely combustible pathway between fire area 002 and fire area 006. The approximate six inch by twelve inch opening which had been made for new conduit installation was located approximately fourteen feet above the floor and above a cable tray which also penetrates the barrier. The hole was located in a manner which left sufficient seal material to provide a full height cable tray fire stop. The new conduit does not add exposed combustibles through the opening. In addition to fire detection and suppression capabilities, each side of the fire barrier is covered by transient combustible control which includes weekly housekeeping tours. These measures are considered adequate to prevent propagation of a fire through the opening. The location of the hole and the new conduit do not change the configuration of intervening combustibles within fire areas 002 and 006. Therefore, the opening in N3 had no adverse impact on the train separation of Unit 1 charging pumps.

The open penetration in the north wall of fire area 002 (N34) degraded the fire barrier and provided a possible but unlikely combustible pathway between fire area 002 and fire zone 142. The approximate six inch by fifteen inch opening which had been made for new conduit installation was located approximately fourteen feet above the floor and above a cable tray which also penetrates the barrier. The hole was located in a manner which left sufficient seal material to provide a full height cable tray fire stop. The new conduit does not add exposed combustibles through the opening. In addition to fire

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TEXT CONTINUATION

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

detection and suppression capabilities, each side of the fire barrier is covered by transient combustible control which includes weekly housekeeping tours. These measures are considered adequate to prevent propagation of a fire through the opening. Twenty feet of horizontal separation remained between redundant trains of Unit 1 charging pump cables with the open penetration seal. The location of the hole and the new conduit do not change the configuration of intervening combustibles within fire area 002 or fire zone 142. Therefore, the opening in N34 had no adverse impact on the train separation of Unit 1 charging pump cables.

Neither opening impacted the train separation of Unit 1 or Unit 2 charging pumps. The charging pumps are the only safe shutdown equipment that might have been affected by the inoperable barriers. Therefore, we conclude that the two fire barrier penetration openings evaluated herein did not adversely affect the level of fire protection provided for PBNP Appendix R safe shutdown equipment.

CAUSE

This event was caused by personnel error. Contract personnel installing new conduit through a fire barrier penetration failed to comply with the requirements of local administrative procedures put in place to ensure the applicable Technical Specifications are observed and the fire protection system continues to perform as required.

CORRECTIVE ACTIONS

Immediate:

1. A fire watch was stationed and maintained in the affected area until both barriers were restored to operability.
2. One of the openings was immediately restored with a temporary seal while permanent repairs commenced on the other.

Short term:

1. Permanent repairs to both seals were completed on July 2, 1991.
2. All other foam seals that had been impaired as a part of the same modification work were inspected and found to be operable.
3. PBNP Procedure 3.4.11, "Barrier Penetrations" was reviewed and found not to have contributed to this incident.

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TEXT (If more space is required, use additional NRC Form 366A (3/17)).

Long term:

1. The PBNP engineer responsible for fire barrier penetration seals has reviewed the requirements for working on these components with the contractor responsible for the conduit installation.
2. Similar inoperability is prevented from existing undetected for long periods by TS 15.4.15.C.1.a, which requires all fire barrier penetration seals to be visually inspected every eighteen months. PBNP is currently performing this surveillance.

REPORTABILITY

This event violated PBNP Technical Specification (TS) 15.3.14.C.1.a, which requires all fire barrier penetration seals protecting safety-related areas to be operable. The event is being reported under the requirements of 10 CFR 50.73(a)(2)(i)(B), "The licensee shall report... any operation or condition prohibited by the plant's Technical Specifications."

GENERIC IMPLICATIONS

No generic problems associated with this incident have been identified. All other foam seals that had been impaired as a part of the same modification work were inspected and found to be operable. Other barrier penetration work going on almost continuously and involving the same contractors has not resulted in other similar problems. This event is considered an isolated occurrence.

SIMILAR OCCURRENCES

Although there are no past occurrences documented of fire barrier seals inadvertently left inoperable, there have been other cases of fire barrier inoperability.

On February 18, 1988, a design deficiency was discovered in fire doors with electric lock strikes which allowed the doors to open upon loss of electrical power. The fire barrier function of the doors could have been compromised by a loss of electrical power. Corrective actions for this event focused on the design deficiencies of the doors and did not address administrative control of fire barrier penetrations. This event was reported in LER 265/88-002-00.

Licensee Event Report 78-012/01X-0, "Fire Wall Penetration Surveillance Discrepancies," reports the results of fire barrier penetration visual inspections which were thought to have revealed barriers not in accordance with plant drawings and specifications. Further investigation revealed that no reportable discrepancy existed.