Indian Point 3
Nuclear Power Plant
P.O. Box 215
Buchanan, New York 10511
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New York Power Authority

John H. Garrity
Resident Manager

September 16 1993
IPN-93-105

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
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Washington, D.C. 20555

SUBJECT: Indian Point 3 Nuclear Power Plant
Docket No. 50-286
License Event Report # 93-029-00
"Technical Specification Violation Caused by Nonfunctional Penetration Fire Seals and Fire Barriers Due to Personnel Error When Specified Penetration Material Was Not Installed per Design Drawings."

Dear Sir:

The attached Licensee Event Report (LER) 93-029-00 is hereby submitted in accordance with the requirements of 10CFR50.73. This event is of the type defined in the requirements pursuant to 10CFR50.73(a)(2)(i)(B). Also attached are the commitments made by the Authority in this LER.

Very truly yours,

John H Garrity

John H. Garrity
Resident Manager
Indian Point 3 Nuclear Power Plant

JG/DOB/vjm

cc: See Next Page

IE22

Mr. Thomas T. Martin
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U.S. Nuclear Regulatory Commission
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King of Prussia, Pennsylvania 19406

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U.S. NRC Resident Inspector's Office
Indian Point 3

Number	Commitment	Due
IPN-93-105-01	A modification to the affected penetration fire seal assemblies to bring their physical condition into compliance with a 3 hour fire rated configuration has been initiated. Modification of the assemblies will be completed prior to startup from the current outage.	Prior to startup
IPN-93-105-02	The current outage engineering acceptance test ENG-527, "Fire Barrier Inspections" will be completed with 100% of the IP3 penetration fire seals inspected, evaluated and repaired, as required. Completion of ENG-527 (also tracked under Performance Improvement Plan (PIP) Item 177.1 Task 10) will address penetration baseline data, plant equipment data base information, procedure revisions assessment, process control issues and an overall root cause evaluation.	Prior to startup

NRC FORM 366 (5-92) U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

APPROVED BY OMB NO. 3150-0104
EXPIRES 5/31/95
ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Indian Point 3	05000286	1 OF 6

TITLE (4) Technical Specification Violation Caused by Nonfunctional Penetration Fire Seals and Fire Barriers Due to Personnel Error When Specified Penetration Material Was Not Installed per Design Drawings.

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
08	19	93	93	-- 29 --	00	09	16	93		05000
									FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)							
POWER LEVEL (10)	000	20.402(b)		20.405(c)		50.73(a)(2)(iv)		73.71(b)	
		20.405(a)(1)(i)		50.36(c)(1)		50.73(a)(2)(v)		73.71(c)	
		20.405(a)(1)(ii)		50.36(c)(2)		50.73(a)(2)(vii)		OTHER	
		20.405(a)(1)(iii)	✓	50.73(a)(2)(i)		50.73(a)(2)(viii)(A)		(Specify in Abstract below and in Text, NRC Form 366A)	
		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)(x)			

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Roger Lauricella, Fire Protection System Engineer	(914) 736-8038

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)			EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE).	X	NO				

ABSTRACT

On August 19, 1993, with the plant in cold shutdown, a Nuclear Engineering and Design (NED) Fire Protection Engineer identified that two penetration fire seals and their associated fire barriers were nonfunctional. The nonfunctional fire seals are located in the walls between the 31/32 and 32/33 Emergency Diesel Generator (EDG) cells, respectively. The nonfunctionality of the seals and barriers is due to their physical configuration which does not conform to a qualified 3 hour fire rated assembly. This condition is a violation of Technical Specification section 3.14.C and has existed since the issuance of Amendment 24 to the Indian Point 3 (IP3) Operating License dated March 6, 1979. The cause of this event was personnel error in that a previous analysis of the assemblies in 1992 (for which a Special Report was sent) did not consider all possible fire effects on the assemblies. The ongoing inspection of 100% of the IP3 penetration fire seals will be completed prior to unit startup from the current plant outage to address all penetration fire seal deficiencies. In addition, a modification to the affected EDG penetration fire seals to provide a qualified 3 hour fire rated assembly will be completed prior to unit startup from the current outage.

DESCRIPTION OF THE EVENT

On August 18, 1993, as part the Authority's ongoing penetration fire seal inspection effort (using the guidance provided in Information Notice (IEIN) 88-04), two penetration (PEN) fire seals (SEAL) were inspected and declared nonfunctional. This nonfunctionality determination was made because of the lack of a qualified 3 hour fire rated assembly in each case. The two penetration fire seals are located between the 31/32 and 32/33 Emergency Diesel Generator (EDG) (DG) cells (NB), respectively. The penetration seals consist, in each case, of two 1/8 inch thick steel panels (PL), 6'6" by 3'0", with 16 inches of air space in between the panels on each side of the barrier. (See diagram attached which shows location of the panels) The panels are in place to permit maintenance of the EDG jacket water and lubrication oil coolers (HX).

On August 19, 1993, the inspection of the two penetration fire seals was reviewed along with historical information on Indian Point 3 (IP3) fire barriers. This information led to the conclusion that the fire barriers between the 31/32 and 32/33 EDGs, respectively, were nonfunctional because of the size of the nonfunctional seals found on August 18, 1993 and the probability that some buckling of the metal panels (with no material between) would occur during an exposure fire.

A Significant Occurrence Report (SOR) was generated detailing the findings and the nonfunctional fire barrier determination. A roving fire watch (established at the beginning of the penetration fire seal inspection effort) was already in place throughout the EDG cell area.

During the Branch Technical Position (BTP) 9.5-1 Appendix A approval process (in the late 1970s) the Authority committed to the Nuclear Regulatory Commission (NRC) that critical fire barriers, which included the walls separating the three EDG cells, would be upgraded to 3 hour fire rated barriers. Implicit in this commitment was assurance that all penetrations through the walls were also 3 hour fire rated. These commitments were reflected in the original fire protection technical specification amendment for IP3, Amendment 24, dated March 6, 1979, to the IP3 Operating License and in section 3.14.C of the IP3 Technical Specifications. Plant drawings from the late 1970s indicate that the penetrations in question were to be filled with Dow Corning (D217) type RTV foam between the two steel panels. This action would have provided a 3 hour fire rated penetration assembly.

On May 6, 1992, the steel panels for the penetration fire seal between the 31 and 32 EDG cells were removed for scheduled 32 EDG maintenance, including cooler removal. This was the first time the panels had been removed to facilitate 32 EDG cooler maintenance and cleaning. No Dow Corning foam material was found between the panels. The steel panels for the 31/32 EDG cell wall were reinstalled on May 30, 1992 upon completion of the 32 EDG cooler work.

An analysis which was performed at that time comparing the steel panel assemblies to a fire door tested and installed per ASTM E-152, "Standard Methods of Fire Tests of Door Assemblies," and NFPA 80-1990, "Standard for Fire Doors and Windows", verified that the configuration was capable of providing protection equivalent to that provided by a 3 hour rated fire door against temperature rise and ignition of combustibles on the unexposed side. A 30 day Special Report, dated June 16, 1992, in accordance with Technical Specifications section 6.9.2, reflected this analysis and stated the Authority would not be filling the penetration, but that combustibles and ignition sources near the penetrations would be minimized and controlled.

This 1992 evaluation did not explicitly include a comparison of the installation to a tested fire penetration design. Neither the evaluation itself nor the review process afforded the Special Report identified the potential for overstressing the mounting bolts of the panels during a postulated exposure fire. However, the Authority did intend to evaluate this penetration fire seal along with all fire seals during planned IEIN 88-04 reviews scheduled for 1993. This Licensee Event Report (LER) reflects that reevaluation and a more rigorous attention to fire protection qualification issues committed to and conducted under the penetration fire seal inspection program, currently in progress.

CAUSE OF THE EVENT

The cause of this event was personnel error in that a specified penetration fire seal design was not installed (sometime in the 1970s) in accordance with plant design drawings for the two penetration fire seals in question. Failure to have considered the mounting bolts in the 1992 evaluation resulted in an incomplete technical evaluation and ultimately in the decision not to modify the penetrations at that time.

CORRECTIVE ACTIONS

The following corrective actions will be performed or have been completed to prevent recurrence of this event:

- A modification to the affected penetration fire seal assemblies to bring their physical condition into compliance with a 3 hour fire rated configuration has been initiated. Modification of the assemblies will be completed prior to startup from the current outage.

- Until such time as the affected penetration fire seals are upgraded to 3 hour fire rated configurations, an existing roving fire watch will remain in place.

- Prior to startup from the current outage, engineering acceptance test ENG-527, "Fire Barrier Inspections" will be completed with 100% of the IP3 penetration fire seals inspected, evaluated and repaired, as required. Completion of ENG-527 (also tracked under Performance Improvement Plan (PIP) Item 177.1 Task 10) will address penetration baseline data, plant equipment data base information, procedure revisions assessment, process control issues and an overall root cause evaluation. These overall issues will be tracked and addressed under closure of PIP Item 177.1, "Implement Fire Protection Improvement/10 CFR 50 Appendix R Compliance." This corrective action will serve to address the extent of condition of the event reported in this LER.

ANALYSIS OF THE EVENT

This event is reportable under 10CFR 50.73(a)(2)(i)(B). The licensee shall report: "Any operation or condition prohibited by the plant's technical specifications." Technical Specification section 3.14.C requires that the "Penetration fire barriers separating the diesel generator compartments from each other and from the Control Building" be functional at all times when the equipment in the areas is required to be operable. The plant has been in violation of the IP3 Technical Specifications for the barriers separating the 31/32 and 32/33 EDGs respectively since the issuance of Amendment 24, dated March 6, 1979, to the IP3 Operating License. No similar LERs have been submitted.

SAFETY SIGNIFICANCE

This event had no significant effect on the health and safety of the public. A review of the EDG cell general arrangement drawings and a walkdown of the area showed no fixed combustible materials within a four foot radius of the penetration fire seals in each EDG cell. Fixed combustibles located in the EDG cells consist mainly of 300 gallons of diesel fuel oil (a combustible liquid) contained in the EDG day tank and lines and 175 gallons of EDG lube oil (a combustible liquid). In the unlikely event of a leak, the oil would pool in the trench area located around and below the EDG itself, which is 5 feet below the penetrations in question. A leak which produced a spray of oil on the surface of the steel plates of the penetration fire seals would also be collected in the trench area which is protected by a wet pipe sprinkler system (KP). No transient combustibles are normally located in the immediate area of the penetrations due to personnel clearance and area access requirements. The penetrations, as currently configured, would provide some level of fire rating for mitigation against fire spread.

In addition, a total flooding CO2 system along with wet pipe sprinklers located above the EDG day tank and below in the trench area is provided in each EDG cell. The EDG cells are a well traveled area of the plant with security rounds normally conducted hourly and operations rounds on at least a shiftly basis whether a fire watch is in effect or not. The Authority concluded that the probability of a fire of sufficient duration occurring that could not be detected and either automatically or manually suppressed within a short time is highly unlikely. A 3 hour fire within the EDG cells is also not a likely occurrence. Loss of all three EDGs due to a fire is covered by the IP3 10 CFR 50 Appendix R analysis and design for safe shutdown of the plant.

DIESEL GENS. 31, 32, 33 - DIESEL GEN. BLDG.
Elev. 15'-0" Fire Area CTL-3