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April 13, 2000

Re: Indian Point Unit No. 2
Docket No. 50-247
LER 2000-002-00

Document Control Desk
US Nuclear Regulatory Commission
Mail Station PI-137
Washington, DC 20555

The attached Licensee Event Report 2000-002-00 is hereby submitted in accordance with the requirements of 10 CFR 50.73.

Very truly yours,



Attachment

cc: Mr. Hubert J. Miller
Regional Administrator - Region I
US Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Mr. Jefferey Harold, Project Manager
Project Directorate I-1
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US Nuclear Regulatory Commission
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LICENSEE EVENT REPORT (LER)

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

Estimated burden per response to comply with this mandatory information collection request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the Records Management Branch (T-6 F33), 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. If an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

FACILITY NAME (1) Indian Point No. 2	DOCKET NUMBER (2) 05000-247	PAGE (3) 1 OF 5
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TITLE (4)
Failure Of Cable Spreading Room Fire Dampers To Close During Surveillance Testing

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
03	14	2000	2000	- 002	- 00	04	13	2000		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	20.2201(b)	20.2203(a)(2)(v)	50.73(a)(2)(i)	50.73(a)(2)(viii)						
	20.2203(a)(1)	20.2203(a)(3)(i)	X 50.73(a)(2)(ii)	50.73(a)(2)(x)						
	20.2203(a)(2)(i)	20.2203(a)(3)(ii)	50.73(a)(2)(iii)	73.71						
	20.2203(a)(2)(ii)	20.2203(a)(4)	50.73(a)(2)(iv)	OTHER						
	20.2203(a)(2)(iii)	50.36(c)(1)	50.73(a)(2)(v)	Specify in Abstract below or in NRC Form 366A						
20.2203(a)(2)(iv)	50.36(c)(2)	50.73(a)(2)(vii)								

LICENSEE CONTACT FOR THIS LER (12)	
NAME Robert Allen, Manager Regulatory Affairs	TELEPHONE NUMBER (Include Area Code) 914-734-5129

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)									
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
B	KQ	BDMP	Pullman	N	B	KQ	HS	Westinghouse	N
D	KQ	BDMP	Pullman	N					

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

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On March 14, 2000, with the unit in cold shutdown condition, four of ten fire dampers in the Cable Spreading Room (CSR) failed to close during the performance of a main transformer deluge test. The cause of the failure of one of the dampers was due to part of the damper being bent. The cause of the failure of the other three dampers has been attributed to the improper installation of "electro-thermal" links (ETL) that are designed to melt when exposed to heat, or in response to an electrical voltage. During the test, the circuits for the ETLs are deenergized by placing the ETL switch in the "Test" position. However, during this deluge test, the ETLs in all ten dampers were inadvertently energized. The ETL switch is being sent to a laboratory for evaluation.

This report is being made per 10CFR50.73(a)(2)(ii)(B) as a condition found to be outside the design basis of the plant. Pursuant to 10CFR50.72(b)(1)(ii)(B), this event was reported to the NRC on March 16, 2000. The health and safety of the public was not affected by this event.

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

PLANT AND SYSTEM IDENTIFICATION

Westinghouse 4-Loop Pressurized Water Reactor
Fire Protection System - Fire Dampers

EVENT IDENTIFICATION

Failure of Cable Spreading Room Fire Dampers to Close During
Surveillance Testing

EVENT DATE

March 14, 2000

REFERENCES

Condition Reporting System Numbers:
200001773, 200001809, 200001825, 200002113

PAST SIMILAR EVENTS

None. While LER 1999-020-00 (dated January 24, 2000) and
EEI 97-03-002 (NRC Inspection Report 50-247/97-03, dated
May 9, 1997) dealt with fire damper issues, neither dealt with
Electro-Thermal Link (ETL) installation or with switch failure.

EVENT DESCRIPTION

On March 14, 2000, with the unit in cold shutdown condition, four
of ten fire dampers in the Cable Spreading Room (CSR) failed to
close during the performance of a main transformer deluge test.
The cause of the failure of one of the dampers was due to part of
the damper being bent. The cause of the failure of the other
three dampers has been attributed to the improper installation of
"electro-thermal" links (ETL) that are designed to melt when
exposed to heat, or in response to an electrical voltage.

During the test, the circuits for the ETLs are deenergized by
placing the ETL switch in the "Test" position. However, during
this deluge test, the ETLs in all ten dampers were inadvertently
energized. The ETL switch is being sent to a laboratory for
evaluation.

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

This report is being made per 10CFR50.73(a)(2)(ii)(B) as a condition found to be outside the design basis of the plant. Pursuant to 10CFR50.72(b)(1)(ii)(B), this event was reported to the NRC on March 16, 2000. The health and safety of the public was not affected by this event.

The fire dampers are spring-loaded to close and are restrained open by the ETL. The ETL consists of two plates surrounding an electrical heater with the three pieces bound together by solder that has a specific melting temperature. When heat is applied to the ETL (either by energizing the electrical heater or by the heat of a fire), the plates separate and the damper closes.

Of the four dampers that did not close, there were two failure modes (i.e., three of the dampers remained fully open, and one damper closed approximately 92 percent of the way). On the three dampers, the ETL plates started to separate, but were unable to completely release due to binding between the electrical conduit fitting nuts and the "clips" on the ETL plates (Cause - B, System - KQ, Component - BDMP). These "clips" are used in the ETL manufacturing process to assure proper alignment of the plates and the heater. On the fourth damper, the ETL released, but due to a bend in the damper, it bound in the lower part of the track (Cause - D, System - KQ, Component - BDMP).

With respect to inadvertent energization of the ETLs, both the procedure sign off and personnel interviews indicate that the switch was in the "Test" position (Cause - B, System - KQ, Component - HS).

EVENT ANALYSIS

As a result of the failure, the ETL circuitry was checked against design drawings. In addition, continuity, grounding, and stray circuit checks were performed. No discrepancies were found. With respect to the ETL switch, continuity was established across the switch and it was cycled six times. The switch responded as expected. However, two failure modes for this type of switch were found in a search of the Nuclear Plant Reliability Database System (NPRDS). One failure was due to wear and the other failures were due to the rear cam screws coming loose. Therefore, the switch is being sent to a laboratory for further evaluation.

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With respect to the binding of the ETL plates, the conduit fittings provided by the vendor did not limit the insertion depth of the ETLs. Thus, if the ETL was inserted too far into the conduit fitting, the fitting nut could bind the "clips" on the ETL plates. The vendor installation documentation did not provide any guidance or precautions on insertion depth of the ETL into the conduit fitting.

The bent damper most probably occurred when maintenance personnel reset the dampers following a test in December 1999. No guidance existed for resetting the dampers in the open position following closure.

EVENT SAFETY SIGNIFICANCE

With the four dampers open, there is a potential for a transformer fire to affect the Cable Spreading Room. In the event of a transformer fire, the station Pre-Fire Plans require the posting of a Fire Watch in the Cable Spreading Room. Thus, early detection and suppression would serve to mitigate the effects. The transformers are not needed for the safe shutdown of the plant, but the Cable Spreading Room contains the normal power supplies for safe shutdown equipment. However, the room is separated by 3-hour rated fire barriers from other areas of the plant that contain alternate power supplies to safe shutdown equipment. Further, the safe shutdown procedure contains instructions for local control of safe shutdown equipment independent of conditions in the Cable Spreading Room. Therefore, even if it is postulated that the fire spreads to the Cable Spreading Room, it is reasonable to expect that safe shutdown of the plant would not be adversely impacted.

CORRECTIVE ACTIONS

Upon determining that some of the fire dampers did not close, the Control Room was notified and a continuous fire watch was posted.

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New conduit fittings, which limit the insertion of the ETL into the fitting, have been installed on all fire dampers requiring ETLs. This assures that there is clearance between the "clips" and the coupling nuts. Documentation and installation procedures have been updated to reflect this clearance requirement. The procedure and documentation now specifies a conduit coupling that contains an internal ridge that precludes full insertion of the ETL and thus will physically maintain the clearance requirement. The bent damper was repaired. The dampers were reset using a reset method that precludes bending of the dampers. To provide assurance that this method worked correctly, the reset dampers were test dropped once more (at this time the fire dampers were still considered inoperable and the fire watch was still in place). While there were no failures due to bent dampers, one damper stopped about 97 percent closed due to a damper spring interfering with the damper track. The damper was again exercised and the failure could not be repeated. Since this type of failure has not been seen before and since the damper was approximately 97 percent closed, this is considered a minor failure. However, when the dampers were reset, care was taken to assure that the springs were correctly aligned. A procedure is being developed to provide direction on using the reset method described above to preclude bending of the dampers while resetting them in the open position and to make sure that the damper springs are properly aligned. This procedure will be implemented by November 30, 2000.

The switch will be sent out for evaluation and any additional corrective actions will be determined based on the results of that evaluation. A supplement to this LER will be provided, if necessary, based on the results of the evaluation. Since this switch is used infrequently and worked correctly during testing performed after the event, and since the failure was in the conservative direction, no other interim corrective actions are being taken pending completion of the switch evaluation.