

Indian Point 3  
Nuclear Power Plant  
P.O. Box 215  
Buchanan, New York 10511  
914 739.8200



**New York Power  
Authority**

March 6, 1992  
IP3-NRC-92-018

Docket No. 50-286  
License No. DPR-64

Document Control Desk  
Mail Station PI-137  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Sir:

The attached Licensee Event Report LER 92-003-00 is hereby submitted in accordance with the requirements of 10CFR50.73. This event is of the type defined in the requirements per 10CFR50.73(a)(2)(i) and 10CFR50.73(a)(2)(vii).

Very truly yours,

A handwritten signature in cursive script, appearing to read 'Joe Russell'.

Joseph E. Russell  
Resident Manager  
Indian Point Three Nuclear Power Plant

jer/ed/rj  
Attachment

cc: Mr. Thomas T. Martin  
Regional Administrator  
Region 1  
U.S. Nuclear Regulatory Commission  
475 Allendale Road  
King of Prussia, Pennsylvania 19406

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Suite 1500  
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PDR ADOCK 05000286  
S PDR

Handwritten initials, possibly 'JE' or 'JR', with a vertical line extending downwards from the right side.

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Indian Point Unit 3	DOCKET NUMBER (2) 0 5 0 0 0 2 8 6	PAGE (3) 1 OF 0 6
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TITLE (4)  
SAFEGUARDS INITIATION TRAIN A INOPERABLE DUE TO FAULTED INDICATING LAMP

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 NAMES		DOCKET NUMBER(S)																																																					
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<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:15%;">OPERATING MODE (8) N</td> <td colspan="11">THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)</td> </tr> <tr> <td rowspan="5">POWER LEVEL (10) 1 0 0</td> <td>20.402(b)</td> <td></td> <td>20.405(c)</td> <td></td> <td>50.73(a)(2)(iv)</td> <td></td> <td>73.71(b)</td> </tr> <tr> <td>20.405(a)(1)(i)</td> <td></td> <td>50.36(c)(1)</td> <td></td> <td>50.73(a)(2)(v)</td> <td></td> <td>73.71(c)</td> </tr> <tr> <td>20.405(a)(1)(ii)</td> <td></td> <td>50.36(c)(2)</td> <td>X</td> <td>50.73(a)(2)(vii)</td> <td></td> <td rowspan="3">OTHER (Specify in Abstract below and in Text, NRC Form 366A)</td> </tr> <tr> <td>20.405(a)(1)(iii)</td> <td></td> <td>50.73(a)(2)(ii)</td> <td></td> <td>50.73(a)(2)(viii)(A)</td> <td></td> </tr> <tr> <td>20.405(a)(1)(iv)</td> <td></td> <td>50.73(a)(2)(iii)</td> <td></td> <td>50.73(a)(2)(viii)(B)</td> <td></td> </tr> <tr> <td>20.405(a)(1)(v)</td> <td></td> <td>50.73(a)(2)(i)</td> <td></td> <td>50.73(a)(2)(x)</td> <td></td> <td></td> </tr> </table>												OPERATING MODE (8) N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)											POWER LEVEL (10) 1 0 0	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)	X	50.73(a)(2)(vii)		OTHER (Specify in Abstract below and in Text, NRC Form 366A)	20.405(a)(1)(iii)		50.73(a)(2)(ii)		50.73(a)(2)(viii)(A)		20.405(a)(1)(iv)		50.73(a)(2)(iii)		50.73(a)(2)(viii)(B)		20.405(a)(1)(v)		50.73(a)(2)(i)		50.73(a)(2)(x)		
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LICENSEE CONTACT FOR THIS LER (12)

NAME Edward Diamond, Senior Plant Engineer	TELEPHONE NUMBER 9 1 1 4 7 3 1 6 1 - 1 8 0 4 5
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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
X	J E	I   L	G   0   8   0	N	X	J E	L   F	D   1   4   9	N

SUPPLEMENTAL REPORT EXPECTED (14)

<input checked="" type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)
		MONTH DAY YEAR 0 9 0 6 9 2

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

On February 9, 1992, with the reactor operating at 100 percent, an indicating lamp on a safeguards panel short circuited. As a result, a fuse blew, deenergizing the control power to train A safeguards sequence. The limiting condition for operation action statements of the Technical Specifications associated with the engineered safety features were entered. A plant shutdown was initiated and an unusual event declared. The fuse was replaced. The plant shutdown and unusual event were terminated. Throughout the period that the train A safeguards sequence was inoperable, manual operation of the associated components was unaffected and train B was fully operable and capable of starting the minimum required safeguards equipment. The lamp socket was replaced on February 11, 1992. To preclude recurrence, all the light bulbs on the panels (which are used for testing) were removed from engineered safety features supervisory monitoring circuits on February 12, 1992. The Authority is evaluating the use of other technology in place of incandescent lamps.

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

DESCRIPTION OF THE EVENT

On February 9, 1992 at 2235 hours, with the reactor at 100 percent power, the control room annunciator "safeguards initiation racks or 480V switchgear sequence DC power failure" alarmed. No safeguards equipment actuated.

At 2250 hours, an investigation identified a blown ten ampere fuse on the DC control power circuit to safeguards initiation train A. As a result, the automatic initiation of train A safeguards components was not available. Manual operation of the equipment and the redundant train B initiation signal was not affected. The affected equipment consisted of:

- 31 safety injection pump
- 31 containment spray pump
- 31 containment fan cooler unit
- 33 containment fan cooler unit
- 34 essential service water pump
- 31 component cooling water pump
- Train A motor-operated valves

At 2255 hours the staff determined that Technical Specifications required the plant to be brought to hot shutdown within four hours. The plant shutdown was initiated. A notification of unusual event (NUE) was declared due to the compromise of the engineered safety features that required a shutdown by Technical Specifications.

At 2320 hours, the blown fuse was replaced, restoring the automatic initiation feature of safeguards train A. After the fuse was replaced, operators identified the bulb of status light 721 discolored. Light 721 is an indicating lamp (General Electric) (G0080) (Model number 3S6/5/1308) (JE) (IL) on safeguards initiation rack 1-1 associated with train A containment spray actuation. An electrical fault had occurred on the lamp or socket (Dialco) (D149) (Model number 820-2701-01-502) (JE) (LF).

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

The control room operators verified that control power had been restored to the train A safeguards sequence by observing that the train A status lights were now illuminated and that the "safeguards initiation racks or 480V switchgear sequence DC power failure" annunciator had cleared (reset). With the train A safeguards sequence control power restored, the NUE and plant shutdown were terminated at 2332 hours. Power had been reduced to 96 percent (980 Mwe) when the shutdown was terminated.

At 2340 hours operators initiated a load ascension to full power. One hundred percent power was reached at 0300 hours on February 10, 1992. At 0410 hours on February 10, 1992, I&C personnel successfully performed surveillance test 3PT-M14A, "Safety Injection System Logic Functional - Train A" to further verify the operability of the safeguards train A initiation logic.

On February 11, 1992, technicians removed the socket of status indicating light 721. The bulb and socket were separated to reveal the electrical fault had occurred at the bulb base.

CAUSE OF THE EVENT

The cause of the event was the short circuit that developed at the bulb base of status indicating light 721.

CORRECTIVE ACTIONS

The blown fuse was replaced with an appropriate ten ampere fuse at 2320 hours on February 9, 1992. The socket of status indicating light 721 was replaced at 0945 hours on February 11, 1992.

To preclude recurrence of this event, a temporary modification evaluated removal of the test panel bulbs. The light bulbs, which are only used for testing, were removed from the engineered safety features supervisory monitoring circuits at 1705 hours on February 12, 1992. The light bulbs will be reinstalled, as required, to support testing and then be removed.

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

A long term corrective action associated with LER 50-286-91-011 continues:

The plant staff will investigate to determine if a better quality indicating lamp can be specified for use in the safeguards initiation racks.

The following, additional long term corrective actions will be implemented:

1. Assess the feasibility of replacing the 3S6 incandescent light bulbs used in the engineered safety features supervisory monitoring circuits with light emitting diodes (LEDs). This assessment will be completed by April 15, 1992.
2. The damaged lamp and socket assembly will be sent to a failure analysis laboratory for detailed examination and failure mechanism determination.

ANALYSIS OF THE EVENT

This event is reportable under 10CFR50.73(a)(2)(i)(B), the plant was operated in a condition prohibited by the facility's technical specifications. Technical specification 3.3.A.3 lists safety injection and residual heat removal systems' components required to be operable when Tavg exceeds 350 degrees F. Specification 3.3.A.4 allows modification of that specification and lists components, any one of which may be inoperable. During the 45 minutes that safeguards initiation train A was inoperable, safety injection pump 31 and multiple safety injection and residual heat removal system valves on motor control center 36A did not have automatic capability. Therefore, they did not satisfy the definition of "operable" contained in technical specification 1.5. Technical specification 3.3.B.1. lists containment cooling and iodine removal systems' components required to be operable before bringing the plant above the cold shutdown condition. Specification 3.3.B.2 allows modification of that specification by permitting any one component of five containment recirculation fans and two containment spray pumps to be inoperable. During the 45 minutes that safeguards initiation train B was inoperable, 31 containment spray pump, 31 containment fan cooler unit, and 33 containment fan cooler unit did not have

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

automatic capability and did not satisfy the "operable" definition.

This event is also reportable under 10CFR50.73(a)(2)(vii) because the loss of safeguards initiation train A caused one independent train to become inoperable in multiple systems designed to mitigate the consequences of an accident for a period of 45 minutes. The safeguards automatic initiation signal for the following components was unavailable during that time:

- 31 safety injection pump
- 31 containment spray pump
- 31 containment fan cooler unit
- 33 containment fan cooler unit
- 34 essential service water pump
- 31 component cooling water pump
- Train A ESS motor-operated valves

During the 45 minute period that safeguards initiation train A was inoperable, train B was operable. A single train of safeguards will start the minimum safeguards equipment needed for accident mitigation. Loss of a single train of safeguards initiating logic is a postulated single failure considered in the Final Safety Analysis Report and is within the design bases of the plant. Furthermore, manual, remote operation of the above components was unaffected by the event. Had an accident occurred during the brief period that safeguards initiation train A was inoperable, Emergency Operating Procedures would have directed operators to manually operate these components to mitigate the severity of the accident.

Two similar LERs have been reported to date, LER 50-286-91-011 and LER 50-286-92-02.

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

SECURING FROM THE EVENT

The blown fuse was replaced at 2320 hours on February 9, 1992. At 2332 hours the NUE and the plant shutdown were terminated. Full power operation was restored at 0300 hours on February 10, 1992. The socket of status indicating light 721 was replaced at 0945 hours on February 11, 1992 and safeguards initiation train A was satisfactorily tested at 1330 hours on February 11, 1992. To preclude recurrence of this event, the light bulbs were removed from the engineered safety features supervisory monitoring circuits at 1705 hours on February 12, 1992.