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)

| FACILITY NAME (1) | DOCKET NUMBER (2) | PAGE (3) |
|---|---|---|
| Indian Point Unit 3 | 05000286 | 1 OF 4 |

TITLE (4) 480 VAC System Lack of Coordination due to an Original Plant Design Deficiency

| 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 |
| 06 | 18 | 93 | 93 | --026-- | 00 | 07 | 19 | 93 | | 05000 |
| | | | | | | | | | FACILITY NAME | DOCKET NUMBER 05000 |

| OPERATING MODE (9) | N |
|---|---|
| POWER LEVEL (10) | 000 |

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)

| | | | | | |
|---|---|---|---|---|---|
| | 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 (Specify in abstract below and in text, NRC Form 366A) |
| | 20.405(a)(1)(iii) | | 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)(x) | | |

LICENSEE CONTACT FOR THIS LER (12)

| NAME | TELEPHONE NUMBER (Include Area Code) |
|---|---|
| Thomas Klein, Manager Electrical Engineering | (914) 681-6264 |

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

On June 18, 1993 at 1800 hours, with the reactor in the cold shutdown condition, Nuclear Engineering and Design (NED) identified a potential single failure in Boric Acid Heat Trace (BAHT) Panel #33 manual throwover transfer switch that could result in the loss of two safety related power supplies, Motor Control Center (MCC) MCC-36A and MCC-36B. A narrow range of fault current, occurring in the manual throwover switch for BAHT Panel #33, may result in a race to trip between MCC feeder fuses (for BAHT circuits) and upstream MCC supply breakers. The loss of both MCCs is outside the design basis for Indian Point 3 (IP3). The cause is an original plant design deficiency. Immediate action was taken to open the fused disconnect switch in cubicle 6RD at MCC-36B. An Engineering Change Notice (ECN) was generated to achieve coordination through fuse replacement. The replacement will be completed prior to the plant going above the cold shutdown condition.

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

## DESCRIPTION OF EVENT

On June 18, 1993 at 1800 hours, with the plant in the cold shutdown condition, Nuclear Engineering and Design (NED) personnel identified that a condition existed which had the potential to significantly compromise plant safety. Specifically, a single failure in Boric Acid Heat Trace (BAHT) Panel #33 manual throwover switch (ED)(HS) could potentially cause the loss of both the normal and back-up safety related power supplies, MCC-36A and MCC-36B. The concern that MCC-36A and MCC-36B may be simultaneously de-energized results from a lack of coordination between the MCC supply breakers located in 480VAC switchgear and the MCC feeder fuses to BAHT panel #33 manual throwover switch.

This condition was documented in Significant Occurrence Report (SOR) 93-343. At 1950 hours on the same day, Operations department personnel made a non-emergency four hour notification to the NRC Operations Center in accordance with 10 CFR 50.72(b)(ii)(B). To ensure that one of the two MCCs would be separate from the single failure source, the alternate feed to BAHT Panel #33 was opened (the fused disconnect on MCC-36B).

## CAUSE OF THE EVENT

The cause of the event was an original plant design deficiency. Specifically, there was no formal and documented examination of the coordination of protection devices regarding this throwover switch application. Coordination of protective devices is now performed using rigorous methods and is documented. Further, the original design requirements for meeting a single failure were through separation criteria. The manual throwover switch feeding BAHT Panel #33 was considered as providing adequate separation. Therefore, under the original design criteria, the throwover switch and related protective devices would have been acceptable.

## CORRECTIVE ACTIONS

The plant was placed in a condition that would not jeopardize multiple safety related trains by the following actions:

- The fused disconnect switch on MCC-36B was opened.

- The NED department has initiated an Engineering Change Notice (ECN) which serves to achieve coordination for these circuits through fuse replacement at the MCC compartments feeding BAHT Panel #33. As part of the IP3 Fuse Control Program, a replacement fuse was selected that will achieve coordination. The modification will be completed prior to plant start-up above the cold shutdown condition.

The following corrective action will prevent recurrence of this event:

- Current NYPA design and modification administrative controls ensure that the design basis of the plant is maintained. Procedures include Engineering Standards Manual EES-6 "Control of Electrical Distribution Changes", Modification Control Manual MCM-9 "Engineering Change Notices", Administrative Procedures AP-12 "Modifications" and Design Control Manual DCM-26 "Fuse Control Program".

## ANALYSIS OF THE EVENT

This event is reportable under sections 10CFR50.73(a)(2)(ii)(B). The licensee shall report any event or condition that results in placing the facility outside its design basis. Since original construction, the plant was in a condition such that, if a fault at the manual throwover switch for BAHT Panel #33 had occurred within a narrow fault current range, the plant would have been outside its design basis. Two safety related power sources, MCC-36A and MCC-36B could have been de-energized due to a single failure in BAHT Panel #33 manual throwover switch.

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## SAFETY SIGNIFICANCE

The miscoordination exists in a very narrow fault current range and a fault has not occurred. Therefore, no threat to public health had occurred as a result of this postulated event. MCC-36A and MCC-36B contain power supplies for engineered safeguard loads. Therefore, if the postulated event did occur, loss of both MCCs from a single failure would place the plant outside its design basis.

This event was discovered as a result of the investigations performed under Authority's Fuse Control Program. This program will continue to identify design deficiencies such as the one reported in this LER. Therefore, the program continues to serve as a method to identify any additional discrepancies, and in this manner continues to serve as a method of determining the extent of condition of this event. A similar event, lack of coordination, was reported in LER 92-006-00.