

Indian Point 3
Nuclear Power Plant
P.O. Box 215
Buchanan, New York 10511
914 736.8001



L. M. Hill
Resident Manager

April 26, 1995
IPN-95-052

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

SUBJECT: Indian Point 3 Nuclear Power Plant
Docket No. 50-286
License No. DPR-64
Licensee Event Report # 95-007-00
**Loss of Motor Control Center 36B Because Of Personnel
Error Caused Emergency Diesel Generator 32 to Become
Inoperable: A Condition Prohibited By Technical Specifications**

Dear Sir:

The attached Licensee Event Report (LER) 95-007-00 is hereby submitted as required by 10CFR50.73. This event is the type defined in 10CFR50.73 (a)(2)(i)(B). Also attached is the commitment made by the Authority in this LER.

Very truly yours,

A handwritten signature in dark ink, appearing to read 'L. Hill'.

L. M. Hill
Resident Manager
Indian Point 3 Nuclear Power Plant

LMH/vjw

Attachment

cc: See next page

9505040063 950426
PDR ADOCK 05000286
S PDR

A handwritten signature in dark ink, appearing to read 'J. Hill'.

cc: Mr. Thomas T. Martin
Regional Administrator
Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, Pennsylvania 19406-1415

INPO Record Center
700 Galleria Parkway
Atlanta, Georgia 30339-5957

U.S. Nuclear Regulatory Commission
Resident Inspectors' Office
Indian Point 3 Nuclear Power Plant

List of Commitments

Number	Commitment	Due
IPN-95-052-01	Revise procedure MCC-001-ELC by incorporating permanent TPC No. 95-0499 dated 3/27/95 in accordance with the requirements of AP-3.	September 22, 1995.

LICENSEE EVENT REPORT (LER)

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

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 (MNB 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.

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TITLE (4) Loss of Motor Control Center 36B Because Of Personnel Error Caused Emergency Diesel Generator 32 to Become Inoperable: A Condition Prohibited By Technical Specifications
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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	27	95	95	-- 007 --	00	04	26	95	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 Nate Heuberger, Maintenance Manager	TELEPHONE NUMBER (Include Area Code) (914) 736-8601
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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

SUPPLEMENTAL REPORT EXPECTED (14)

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

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

On March 27, 1995, a Control Room annunciator indicated a loss of Motor Control Center (MCC) 36B. Loss of MCC-36B resulted in the loss of, among other components, auxiliary components for Emergency Diesel Generator (EDG) 32 rendering that EDG potentially inoperable. A one hour non-emergency notification conservatively reported the plant outside design basis. Operations concluded, since EDG 33 was inoperable because of preventive maintenance, that caused two out of three EDGs to be inoperable therefore, the plant was in a condition prohibited by Technical Specifications. The cause of the event was a personnel error while conducting preventive maintenance on a circuit breaker cubicle of MCC-36B which resulted in the shorting of the feed (line) side terminals. The electrical short injured the worker and caused the MCC-36B feeder breaker on 480 VAC Safety Bus 6A to trip. MCC-36B is the power supply for the auxiliary components for EDG 32. The non-contaminated injured man was transported via ambulance to a local hospital, where he was treated and subsequently released. After various electrical verification checks were satisfactorily completed on MCC-36B and its feeder breaker, MCC-36B was re-energized and EDG 32 declared operable. Corrective actions include revision of the maintenance procedure to provide additional clarifications, purchase of additional insulated tools, conduct of a Performance Enhancement Review Committee meeting and maintenance staff meetings to discuss the event and identify lessons learned.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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

DESCRIPTION OF EVENT

On March 27, 1995, at approximately 1425 hours, with the plant in cold shutdown, reactor power level at 3 CPS, average coolant temperature at 178 degrees F and coolant pressure at approximately 360 psig, an annunciator alarm was received in the Control Room indicating that the 480 VAC Motor Control Center (ED) (MCC) 36B had been lost. The loss of MCC-36B resulted in loss of power to, among other components, Emergency Diesel Generator (EDG) (EK) 32 auxiliary components; thereby, rendering the EDG 32 potentially inoperable. One of the affected MCC Cubicles 5RM, powers the EDG 32 Fuel Oil Transfer Pump (DE), the EDG Engine Crankcase Exhauster 32, EDG Building Sump Pump (WK) 33, and one of the redundant Exhaust Fans (VJ) (Nos. 315, 317, and 319) for each EDG Room. In addition, the Fire Display Control Panel (IB) was also de-energized as a result of tripping MCC-36B. However, hourly roving fire watches for ongoing fire protection (10CFR50, Appendix R) work remained in effect throughout the event. Fire fighting capability was available since the main fire pumps remained operable.

Operations concluded that two EDGs were inoperable because of the power loss to EDG 32 auxiliary components with EDG 33 out of service for preventive maintenance. At 1524 hours, a one hour non-emergency notification reported the plant outside design basis. After further assessment operations concluded that with two out of three EDGs inoperable the event was a violation of Technical Specifications. Operations documented this event in Deviation Event Report (DER) 95-0660, as a violation of Technical Specification 3.7.F.4, which requires at least two operable EDGs in cold shutdown. Coincident to this event, at 1428 hours, the Control Room received a report of an injured man in the vicinity of MCC-36B. Emergency medical personnel and Operations staff were dispatched to the scene.

The injured man had received flash burns while performing preventive maintenance on Auxiliary Component Cooling Water Pump 32 Cubicle 5RK in MCC-36B. He was not radiologically contaminated. At 1453 hours, the injured worker was transported to an offsite medical facility (Hudson Valley Medical Center, Peekskill, NY).

The one hour notification report identified the EDG 32 as "potentially inoperable" because the auxiliary support equipment, normally powered from MCC-36B, would not have prevented EDG 32 from starting and loading. However, the EDG 32 was considered inoperable because after starting, the diesel engine crankcase would pressurize without the crankcase exhauster and result in unreliable EDG operation.

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A preliminary inspection of the affected MCC-36B cubicle indicated that the DE-ION disconnect switch was open and the load side fuses had been removed as required for work on the load side of the cubicle. However, this leaves a small area above the DE-ION disconnect switch energized (line side) unless the entire MCC is de-energized. The de-energization of an entire MCC is usually impractical. MCC-36B is a Westinghouse Type "W" 480 VAC Motor Control Center (W123) located in the Primary Auxiliary Building (PAB) (NF), elevation 55 foot. Access to the energized components is physically restricted by a cover, although it is possible to insert small diameter objects (e.g., screwdriver) such that they could contact energized components. Inspection of the MCC cubicle and the screwdriver which was in use at the time, indicated that the shank of the screwdriver had contacted energized equipment causing a short circuit which tripped the MCC-36B supply feeder breaker. The affected cubicle was removed from the MCC under an emergency work request (WR 95-01505-01). The bus work behind the cubicle was inspected with no damage observed. Adjoining cubicles and raceways were also inspected with no damage noted. The MCC feeder breaker was racked out and visually inspected again with no damage noted. The MCC was meggered satisfactorily via the load side stabs of the feeder breaker and the breaker was then racked in. On March 27, 1995, at 1705 hours MCC-36B was re-energized and at 1713 hours, the EDG 32 was declared operable. A follow-up report was made to the NRC at 1727 hours.

The injured worker who was transported to an offsite medical facility was treated for first degree burns to the right hand and face, and first and second degree burns of the left hand. There was no radiological contamination of the injured worker. The worker was later released and returned to work the next day, Tuesday, March 28, 1995. The injured person is an electrician contracted to the Maintenance department for outage support. He is an experienced electrician who had previously completed preventive maintenance successfully on similar MCC cubicles.

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The event was a potential human performance problem; therefore, a Performance Enhancement Review Committee (PERC) meeting was convened on April 6, 1995 to review the event to provide management support and involvement in the identification and correction of the underlying causes of human performance problems. At that meeting, the worker stated that while tightening the screw for the locking latch of the MCC-36B bucket for Auxiliary Component Cooling Water Pump 32, the screwdriver slipped and contacted an energized lug on the line side behind the latch. PERC also noted that checking the tightness of the locking latch was not a required procedural step. PERC concluded that the human performance problem was a personnel cognitive error where momentary carelessness allowed the screwdriver to slip off the screw.

CAUSE OF EVENT

The cause of the event was personnel error which resulted in an inadvertent insertion of a screwdriver into energized components. While access to energized MCC components is restricted with its disconnect switch (DE-ION) open, it is possible to insert small diameter objects such as screwdrivers into the area above the DE-ION disconnect switch and make contact with energized components.

Contributing to this event were the following:

- Inattention to detail in which the worker was not paying attention to precautions contained in procedure MCC-001-ELC and a complacent mindset that the task was a routine activity.
- Inadequate procedural guidance for warnings being placed immediately before a potentially hazardous step when working with an energized line side. The procedure also was not precise in defining when insulated tools and electrical protective equipment needed to be used.
- Failure to have only insulated tools available when performing work near energized equipment.

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CORRECTIVE ACTION

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

- Appropriate electrical inspections and tests were conducted and MCC-36B was re-energized and declared operable on March 27, 1995 at 1705 hours, which restored EDG 32 to operability and at 1713 hours, EDG 32 was declared operable.
- A meeting was convened with on-site electricians on March 27, 1995, at 1700 hours, to discuss the event and review proper precautions for working on electrical components, particularly MCC cubicles. At that meeting the Safety Program Administrator stated and reinforced that the recently revised and re-issued Indian Point 3 Electrical Work Practices and Procedures Work Rules define the minimum required standards acceptable for work on electrical equipment. The PERC meeting also referenced the Electrical Work Practices and Procedures Work Rules and discussed lessons learned. All other departments were informed of the event and lessons learned through safety tailgate meetings on the following Friday, March 31, 1995. Managers and supervisors were specifically informed of the lessons learned at the next two Plan-of-the-Day (POD) meetings and the Plant Leadership Team (PLT) meetings.
- A Term Procedure Change (TPC) 95-0499 was issued for Maintenance Procedure MCC-001-ELC to clarify the precautions by stating that only insulated tools are used while working within this procedure, to ensure that a meter is used to check that equipment is de-energized, to specifically define when electrical protective equipment must be worn, and to provide caution statements warning of the energized line side immediately before a step. Other electrical safety statements in the procedure were also clarified including verification that load side wiring connections are tight instead of all wiring connections are tight. TPC 95-0499 is a permanent TPC which will be incorporated into procedure MCC-001-ELC in accordance with the requirements of Administrative Procedure AP-3, "IP3 Procedure Preparation, Review and Approval."
- 4. Additional insulated tools were purchased and stocked in the tool room to ensure their availability when personnel work near energized circuits.

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ANALYSIS OF EVENT

This event was conservatively reported as a one hour non-emergency report under 10 CFR 50.72(b)(1)(ii)(B); a condition that was outside the design basis of the plant. During the event, EDG 31 could have supplied emergency power to 480 VAC Electrical Distribution System Buses 2A and 3A, which includes RHR Pump 31, to maintain a safe plant condition during cold shutdown. Therefore, this event is being reported under 10 CFR 50.73(a)(2)(i)(B). The licensee shall report any operation or condition prohibited by the plant's Technical Specifications. Emergency Diesel Generator (EDG) 32 was determined inoperable as a result of the loss of 480 VAC Motor Control Center (MCC) 36B, when EDG 33 was out of service for preventive maintenance, causing two of three EDGs to be inoperable, which is a violation of Technical Specification 3.7.F.4.

Similar events have been reported in previous Licensee Event Reports. Events related to EDG support systems affecting the operability of the EDGs have been reported in LERs; 94-010, 93-053, 93-050, and 93-042. Events related to improper maintenance or testing of EDG support systems which affected the operability of the EDGs have been reported in LERs; 93-020, 93-024, 93-032, and 93-033.

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SAFETY SIGNIFICANCE

This event had no significant effect on the health and safety of the public.

The basis for this conclusion is that the loss of EDG 32 was due to a random, unintended human error. During the event there was no loss of the normal power sources used to maintain cold shutdown (offsite power), nor was there any plant evolution or transient which would have presented a challenge requiring the use of the EDGs. Also, EDG 31 could supply emergency power to 480 VAC Electrical Distribution System Buses 2A and 3A, which includes RHR Pump 31, to maintain a safe plant condition. The loss of the EDG due to random human error can be considered similar to a single failure. Therefore, with one EDG operable, adequate EDG capacity was available during this event to maintain a safe plant condition. If this event had occurred when operating, three EDGs are required per Technical Specification 3.7. Any two emergency diesel generator units, as a backup to the normal AC power supply are capable of sequentially starting and supplying the power requirement of one minimum required set of safeguards equipment. Any two diesels have adequate capacity to supply the engineered safety features for the hypothetical accident concurrent with loss of outside power. In addition, although the Appendix "R" Diesel Generator was not available during this event, it normally represents an alternate onsite source of power for safe shutdown loads since it is required to be available above cold shutdown to feed the 6.9kV buses that supplies the 480 VAC Electrical Distribution System (EDS).

The loss of power to the EDG 32 engine crankcase exhaustor would not have prevented EDG 32 from starting and loading. However, without the crankcase exhaustor, the crankcase would pressurize and be relieved by blowout units resulting in unreliable (degraded) EDG operation.