

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



Robert J. Barrett
Site Executive Officer

May 18, 1999
IPN-99-058

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

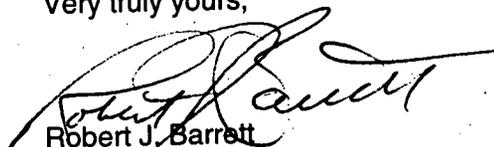
SUBJECT: Indian Point 3 Nuclear Power Plant
Docket No. 50-286
License No. DPR-64
Licensee Event Report # 1999-004-00
**Operation in a Condition Prohibited by Technical Specifications,
Both Boric Acid Transfer Pumps Inoperable Due to No Allowed
Outage Time Being Provided and Personnel Error**

Dear Sir:

The attached Licensee Event Report (LER) 1999-004-00 is hereby submitted as required by 10 CFR 50.73. This event is of the type defined in 10 CFR 50.73 (a)(2)(i)(B).

The Authority is making no new commitments in this LER.

Very truly yours,


Robert J. Barrett
Site Executive Officer
Indian Point 3 Nuclear Power Plant

cc: See next page

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cc: Mr. Hubert J. Miller
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

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.

LICENSEE EVENT REPORT (LER)

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

FACILITY NAME (1)

Indian Point 3

DOCKET NUMBER (2)

05000286

PAGE (3)

1 OF 5

TITLE (4)

Operation in a Condition Prohibited by Technical Specifications, Both Boric Acid Transfer Pumps Inoperable Due to No Allowed Outage Time Being Provided and Personnel Error

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
04	21	1999	1999	004	00	05	18	1999		05000
										05000

OPERATING MODE (9)	N	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more) (11)						
		20.2201(b)		20.2203(a)(2)(v)	X	50.73(a)(2)(i)		50.73(a)(2)(viii)
		20.2203(a)(1)		20.2203(a)(3)(i)		50.73(a)(2)(iii)		50.73(a)(2)(x)
		20.2203(a)(2)(ii)		20.2203(a)(3)(iii)		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: Anthony Russo, Electrical Engineer
 TELEPHONE NUMBER (Include Area Code): (914) 736-2565

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

SUPPLEMENTAL REPORT EXPECTED (14)

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

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

On April 21, 1999, investigation of off-normal control room indicators revealed that the 32 Boric Acid Transfer Pump (BATP) was not running, and it was declared inoperable. During this time the 33 Emergency Diesel Generator (EDG) was inoperable as a result of corrective maintenance. Because the 33 EDG is the emergency power supply for the 31 BATP, it was also declared inoperable, resulting in two inoperable BATPs. Technical Specification (TS) 3.2.B.2 requires two BATPs to be operable, and has no allowed outage time for two inoperable BATPs. For Limiting Conditions for Operation (LCO) where no exception time is specified, the plant is in a condition prohibited under TS 3. At 1422 hours, Operations entered TS 3., and began making preparations for plant shutdown and for returning the 32 BATP and EDG-33 to operable. The 33 EDG was made operable and returned to service and the 31 BATP made operable at 1610 hours. No load reductions were initiated. The 32 BATP was determined to have tripped as a result of undersized thermal overload heaters (O/L HTRs) for the pump motor; the O/L HTRs were installed during preventive maintenance of its motor control center feeder cubicle. The cause of the undersized O/L HTRs was personnel error due to poor work practices and inadequate written communication. The event was a result of TS 3.2 not specifying an allowed outage time. Corrective actions included replacing the 32 BATP O/L HTRs, reinforcing managements expectations to engineering, and submittal of a TS change to the NRC that will allow correcting the lack of an allowed outage time. A review will be performed of the O/L HTR configuration control, sizing, re-testing, and extent of condition findings and corrective actions implemented as required. The event had no effect on public health and safety.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Indian Point 3	05000286	1999	004	00	2 OF 5

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

Note: The Energy Industry identification system Codes are identified within the brackets {}

DESCRIPTION OF EVENT

On April 21, 1999, with reactor power at approximately 100 percent, a reactor operator observed the 32 Boric Acid Transfer {CB} Pump {P} (BATP) control switch {33} in its automatic position, but with no amps on its indicator and all three of its status indicating lights {IL} illuminated. Investigation revealed that the pump was not running and a problem identification (PID) was issued and further investigation requested. At approximately 1422 hours, Operations declared the 32 BATP inoperable and entered the Limiting Conditions for Operation (LCO) Action Statement (AS) for Technical Specification (TS) 3.2.C.2. During this time the 33 Emergency Diesel Generator {EK} (EDG) was inoperable as a result of corrective maintenance. Because the 33 EDG is the emergency power supply for the 31 BATP, this redundant pump was rendered inoperable in accordance with TS 3.7.G, resulting in two inoperable BATPs. The 31 BATP was declared inoperable at approximately 1422 hours and its TS LCO entered. TS 3.2.B.2 requires two BATPs to be operable. TS 3.2.C.2 allows one BATP to be inoperable, but the TS has no allowed outage time for two inoperable BATPs. For LCO where no exception time is specified, the plant is in a condition prohibited under TS 3. A deviation event report (DER 99-00788) recorded the condition and corrective actions were initiated.

Operations entered TS LCO 3., and began making preparations for plant shutdown and for returning the 32 BATP and EDG-33 to operable. Operations stopped the maintenance on the EDG-33 and returned it to operable. The TS LCO Action Statements (AS) for the 33 EDG and the 31 BATP were exited at 1610 hours. Two BATPs were inoperable for approximately 108 minutes. No load reductions occurred. Troubleshooting determined that the 32 BATP had tripped as a result of undersized thermal overload heaters (O/L HTRs) for the pump motor {MO}. The correct O/L HTRs were installed for the 32 BATP motor, and it was returned to operable at 2202 hours.

Further investigation determined that the O/L HTRs were installed on April 20, 1999, during a scheduled preventive maintenance (PM) for the 32 BATP Motor Control Center {MCC} feeder cubicle. The PM was implemented by a work request (WR) developed by Central Planning (CP) personnel. Part of the work to be performed during the PM was to verify that the proper size O/L HTRs were installed. The preliminary WR identified the required motor O/L HTRs, but during development of this WR, discrepancies regarding the proper O/L HTRs were found. CP requested engineering to clarify the motor O/L HTR requirements, and they responded by updating the WR with the O/L HTR requirements per the latest approved thermal overload heater evaluation (TORE). However, the TORE used as a basis for engineering's response was for different O/L HTRs, to support new BATPs that were to be installed during the next refueling outage. CP issued the PM WR based on the information provided by engineering and on April 20, 1999, maintenance initiated the PM. Maintenance stopped the PM after identifying that the installed O/L HTRs did not agree with the WR, initiated a DER and contacted CP.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Indian Point 3	05000286	1999	004	00	3 OF 5

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

CP confirmed the O/L HTRs identified in the WR were correct based on the information provided by engineering and so maintenance installed the WR identified O/L HTRs. Post PM testing was performed. An extent of condition review was performed on a sample of other TORE's provided to CP to identify similar inadequacies. Included was a review of associated PMS, work requests, and plant equipment data base (PEDB) data for each applicable MCC to verify that the O/L HTR size, as determined by the TORE, was correctly translated into the PEDB and provided to CP. No problems which could have caused safety related loads to become inoperable were found.

CAUSE OF EVENT

The direct cause of the trip of the 32 B ATP was undersized thermal overload heaters for the pump motor. Because the 33 EDG was inoperable as a result of corrective maintenance, and the 33 EDG is the emergency power supply for the 31 B ATP, this redundant pump was rendered inoperable resulting in two inoperable B ATPs. Because TS 3.2.B.2 has no allowed outage time specified for two inoperable B ATPs, the plant was in a condition prohibited by Technical Specifications.

The cause of the undersized O/L HTRs was personnel error due to poor work practices, and inadequate written communication. The undersized O/L HTRs were installed based on incorrect sizing information provided by an engineer. The engineer responded to a request for the proper size O/L HTRs to be identified in a PM WR with a size based on a previously approved evaluation. However, the evaluation used had been performed for a proposed replacement motor, not the currently installed 32 B ATP motor. Due to a difference in the electrical characteristics between the proposed motor and the existing 32 B ATP motor, the O/L HTR size that was provided to planning was incorrect and caused the motor to trip after it was installed and run with a load at the O/L HTR setpoint. The engineer did not provide adequate attention to detail and failed to perform self checking to ensure the information provided to the planning department was correct. An informal process was relied upon to document O/L HTR sizing discrepancies and resolutions. Contributing causes were an inadequate process to control O/L HTR sizing data, and failure of the thermal overload relay evaluation (TORE) to indicate that it was for a proposed motor and not the existing motor.

CORRECTIVE ACTIONS

The following corrective actions have been or will be performed under the Authority's corrective action program to address the causes of this event.

- The thermal overloads for the motor of the 32 B ATP were replaced.
- A proposed change was submitted to the NRC (NYPA letter dated November 16, 1998) to relocate Technical Specification Section 3.2, which will allow correction of inadequate or overly restrictive requirements. The Authority also submitted a proposed change for conversion to the Standard TS (STS) by letter dated December 11, 1998.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Indian Point 3	05000286	1999	004	00	4 OF 5

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

- The appropriate personnel were counseled regarding management's expectations for attention to detail and the need to perform adequate error detection.
- A review will be performed of the O/L HTR configuration control, sizing, adequacy of re-testing and extent of condition identified discrepancies, and corrective actions identified and implemented as required.

ANALYSIS OF EVENT

The event is reportable under 10 CFR 50.73 (a) (2) (i) (B). The licensee shall report any operation or condition prohibited by the plant's Technical Specifications.

This event meets the reporting criteria because TS 3.2 does not contain an allowed outage time (AOT) or action statement (AS) when the requirements of TS 3.2.B.2 and TS 3.2.C.2 are not met. TS 3.2.B.2 requires that two BATPs shall be operable above cold shutdown, and allows one BATP to be inoperable for a period not to exceed 48 hours.

When corrective maintenance was being performed on the 33 EDG, it was declared inoperable. The 31 BATP is powered from 480 volt {ED} bus {BU} 5A whose emergency supply is the 33 EDG, but normal power was available. TS 3.7.G allows a system, subsystem, train, component or device that is determined to be inoperable solely because its emergency power source is inoperable to be considered operable for the purpose of satisfying the requirements of its specification provided all of its redundant systems, subsystems, trains, components and devices are operable or likewise satisfy the requirements of the specification. Therefore, the 31 BATP was considered operable, but when the 32 BATP motor tripped and failed to operate and was declared inoperable, the 31 BATP became inoperable based on TS 3.7.G. With two BATPs inoperable, the plant was being operated in a condition prohibited by the Technical Specifications because the requirements of TS 3.2.B.2 were not met and no action statement is provided. For LCOs where no exception time is specified, the plant is in a condition prohibited by TS 3.

A review of the past two years of Licensee Event Reports (LER) for events that involved inoperable equipment that had no Technical Specification AOT identified LER 97-032-02, LER 98-005-01, and LER 98-008. LER 97-032-02 was for an inoperable 480 volt safeguards bus for which TS 3.7 has no allowed outage time. LERs 98-005-01 and 98-008 were both for inoperable city water valves for which TS 3.2 has no allowed outage time. These LERs were attributed to equipment failures coupled with inadequate TS and their corrective actions would not be applicable to this event which was caused by personnel error. The Authority previously realized the need for improving the TS and has submitted a proposed conversion to the STS.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)		PAGE (3)
Indian Point 3	05000286	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER
		1999 --	004 --	00

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

SAFETY SIGNIFICANCE

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

There were no actual safety consequences for the event because there was no event requiring emergency boration and the primary and alternate means of reactivity control were available. An alternate method of boration was available through the use of the charging pumps {CB} taking suction directly from the refueling water storage tank {TK} (RWST) {CB}. In addition, EDG-33 was inoperable during replacement of its engine silencer because its control switch {33} was repositioned from automatic for personnel safety concerns. EDG-33 was rapidly made available and was returned to operable to support emergency powering of B ATP 31.

There were no potential safety consequences due to design bases events from the unavailability of the BATPs. Normal reactivity shutdown capability is provided by control rods {AA}, with boric acid addition used to compensate for long term Xenon decay transients and for plant cooldown. The BATPs are the normal means of accomplishing control of the Reactor Coolant System {AB} (RCS) boron inventory by using any one of three charging pumps in series with either one of the two BATPs.

The control rods are the normal reactivity shutdown capability for making the core {AC} subcritical under credible accident conditions. The Reactor Protection System (RPS) {JC} opens the Reactor Trip Switchgear (RTS) breakers {AA} as needed, causing the control rods to fall into the core. The reactor uses high speed magnetic-type control rod drive mechanisms {AA} which upon a loss of power, release the Rod Cluster Control (RCC) assemblies {AC} which fall by gravity into the core.

The capability of making the core subcritical under any anticipated operating conditions including anticipated operational transients, sufficiently fast to prevent exceeding acceptable fuel damage limits, is achieved with a combination of control rods and automatic boron addition assuming the most reactive control rod is fully withdrawn. Automatic boron addition is provided by injection of borated water from the RWST with the safety injection {BQ} (SI) pumps. The plant was capable of meeting this requirement during this event.