



New York Power
Authority

Memorandum

October 4, 1993
IPN-93-117

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

SUBJECT: Indian Point 3 Nuclear Power Plant
Docket No. 50-286
License Event Report # 93-033-00
"Failure to Amend Technical Specifications Due
to Personnel Error Resulted in Plant's
Emergency Diesel Generator Fuel Oil Levels
Being Potentially Less Than the Minimum
Required"

Dear Sir:

The attached Licensee Event Report (LER) 93-033-00 is hereby submitted in accordance with the requirements of 10CFR50.73. This event is of the type defined in the requirements pursuant to 10CFR50.73(a)(2)(ii)(B). Also attached are the commitments made by the Authority in this LER.

Very truly yours,

A handwritten signature in cursive script, reading "John H. Garrity".

John H. Garrity
Resident Manager
Indian Point 3 Nuclear Power Plant

JHG/DOB/vjm

cc: See Next Page

Handwritten initials "JHG" and the number "11" below them.

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

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

U.S. NRC Resident Inspector's Office
Indian Point 3

Attachment
 List of Commitments

Number	Commitment	Due Date
IPN-93-117-01	Weekly surveillance test 3PT-W1, "Emergency Support Systems Inspection," Alarm Response Procedure 11 ARP-11, "Panel SHF - Electrical," and System Operating Procedure EL-9 (SOP-EL-9), "Filling Diesel Fuel Oil Storage Tanks" will be revised to reflect the minimum required fuel level as calculated in IP3-CALC-EG-00217 plus an allowance for the uncertainty of the level indication method used to determine actual level in the tanks.	Prior to plant startup
IPN-93-117-02	A request for an amendment to IP3's Technical Specification sections 3.7.A.5 and 3.7.F.4 will be submitted to reflect the minimum required fuel level as calculated in calculation IP3-CALC-EG-00217.	Prior to plant startup
IPN-93-117-03	A sample of modification packages where setpoints were changed and the 10CFR50.59 review indicated that a change to Technical Specifications was not required will be reviewed to determine the extent of this condition.	Prior to plant startup
IPN-93-117-04	MMP 90-3-116 EDG will be revised to indicate that a Technical Specification change is required.	Prior to plant startup
IPN-93-117-05	The lessons learned from the event will be discussed with the engineering staff to reenforce the necessity for attention to detail.	Prior to plant startup
IPN-93-117-06	Modification Control Manual procedure MCM-8, "Setpoint Control," has been drafted to establish a method for controlling, revising, adding, analyzing and documenting setpoint changes made to equipment at IP3 and FitzPatrick.	December 3, 1993.

IPN-93-117-07	The EDG fuel oil storage tank level indicator calibration procedures will be revised to ensure the proper underground fuel oil storage tank penetration (see mark 11 on WEDCO corporation drawing FP 9321-05-2990-0) is used for sounding the tanks.	Prior to plant startup
IPN-93- 117-08	Operations and I&C personnel will be trained to use the proper sounding penetration when sounding the tanks.	Prior to plant startup

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 (MNBB 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.

FACILITY NAME (1) Indian Point Unit 3	DOCKET NUMBER (2) 05000286	PAGE (3) 1 OF 6
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TITLE (4) Failure to Amend Technical Specifications Due to Personnel Error Resulted in Plant's Emergency Diesel Generator Fuel Oil Levels Being Potentially Less Than the Minimum Required

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
09	03	93	93	-- 033 --	00	10	04	93	FACILITY NAME	DOCKET NUMBER
										05000
										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)			

Name Robert Fredricksen, I&C Engineering Manager	TELEPHONE NUMBER (Include Area Code) (914) 287-3476
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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)					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 September 3, 1993, with the plant in the cold shutdown condition, an engineering evaluation concluded that Technical Specification section 3.7.A.5, was inadequate for ensuring that the design basis minimum usable volume of 5238 gallons in each fuel oil storage tank for the emergency diesel generators (EDG) required by the Final Safety Analysis Report (FSAR) will not be violated. The plant was potentially outside its design basis from December 4, 1992 to December 24, 1992 while it was above the cold shutdown condition operating at 100 percent power. The cause for this event was personnel error by the engineers responsible for preparing and reviewing a modification to the EDG fuel oil storage tank level switches' setpoints. A Technical Specification amendment was not obtained prior to modification implementation. The corrective actions include submitting a request for an amendment to the plant's Technical Specifications, revising the Operations logs to reflect the new minimum required fuel volume, briefing the engineering staff on the lessons learned, and revising the nuclear safety evaluation in the modification package which changed the EDG fuel oil storage tank level switches' setpoints.

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 September 3, 1993, with the plant in the cold shutdown condition, an initial engineering evaluation concluded that Technical Specification section 3.7.A.5, which requires a minimum onsite supply of 5676 gallons of fuel in each of the three emergency diesel generator (EDG) fuel oil storage tanks (DE), was inadequate for ensuring that the design basis minimum usable volume of 5238 gallons in each tank required by the Final Safety Analysis Report (FSAR) will not be violated. The evaluation was documented in a Significant Occurrence Report (SOR) 93-486 written on September 3, 1993. The engineering evaluation was prompted by questions raised during a followup Nuclear Regulatory Commission (NRC) inspection being conducted to address unresolved open items associated with an electrical distribution system functional inspection (EDSFI) (NRC Inspection Report No. 50-286/91-80) which had been conducted in March and April 1991.

The Indian Point 3 (IP3) Technical Specification section 3.7.A.5 requires "three diesel generators operable with a minimum onsite supply of 5676 gallons of fuel available in each of the three individual underground storage tanks" when the reactor is above the cold shutdown condition. The Final Safety Analysis Report (FSAR) section 8.2.3 states that, "Assuming only two of the underground storage tanks are available and 5238 gallons usable per tank, this is sufficient fuel for at least 48 hours of minimum safeguards equipment."

The minimum required volume of 5676 gallons per tank (TK) assumes an unusable volume of 438 gallons in each tank, since the low level pump cutoff switches (LC) will cut off the fuel oil transfer pumps to protect them from the damaging effects of vortexing (5238 usable gallons + 438 unusable gallons = 5676 total gallons).

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Calculation IP3-CALC-EG-00217, revision 0, "Emergency Diesel Generator Storage Tank Level Setpoints" (approved October 15, 1991) redefined the setpoints for the EDG fuel oil storage tanks' level switches. The modified setpoints for the transfer pump low level cutoffs resulted in an unusable volume of 927 gallons in each tank. Therefore, the new minimum required volume became 6165 gallons (5238 usable gallons + 927 unusable gallons = 6165 total gallons). Minor modification package MMP 90-03-116 EDG revision 0, (approved in April 23, 1992 and declared operable July 11, 1992) changed the EDG fuel oil transfer pump low level cutoff and central control room (CCR) fuel oil storage tank low level alarm setpoints to the values specified in IP3-CALC-EG-0217. Pre-implementation NRC approval was not obtained for a Technical Specification amendment to change the minimum required fuel oil volume to account for the additional 489 gallons of unusable fuel in each tank.

Further investigation conducted by the plant staff raised questions about the method used to determine and record actual level in the EDG fuel oil storage tanks. The investigation revealed that the weekly surveillance test, 3PT-W1 revision 15, "Emergency Diesel Support Systems Inspection," used to confirm that the Technical Specification requirement for minimum fuel oil volume in the underground storage tanks is satisfied relies on a level indicator (LI) that has an accuracy of +/- 385 gallons. This inaccuracy apparently was not considered in determining the minimum fuel volume to be maintained in the tanks by the level indicators.

Based on this information and a review of plant operating logs since implementing the modification, the plant staff determined that from December 4, 1992 to December 24, 1992, the recorded values of EDG fuel oil storage tank levels indicate that the minimum required usable fuel volume of 5238 gallons was not maintained.

CAUSE OF EVENT

The cause of the failure to change Technical Specification section 3.7.A.5 was personnel error by the engineers responsible for preparing and reviewing minor modification package MMP 90-3-116 EDG. The nuclear safety evaluation in MMP 90-3-116 EDG, section 8.0, incorrectly indicates that a change to the Technical Specifications is not required.

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This error was due to misjudgment. The conclusion that an amendment to the plant's Technical Specifications was not required was arrived at through a misinterpretation of the setpoint calculation which was viewed as adding additional margin of safety only and not as a recalculation of the minimum allowable fuel volume.

A contributing cause was a personnel error by the engineer performing calculation IP3-CALC-EG-00217 to conclude that a Technical Specification change was required. This error was due to inattention to detail.

CORRECTIVE ACTIONS

The following Corrective Actions have been or will be performed in order to prevent recurrence of this event:

- Operating log sheets have been revised to show ">6500" gallons for "Normal Fuel Oil Storage Tanks Levels" and ">6165" gallons for "MIN/MAX" on September 3, 1993. These logs were revised further on September 17, 1993 to show ">6850" gallons for "Normal Fuel Oil Storage Tanks Levels" and ">6550" gallons for "MIN/MAX" to account for the +/- 385 gallons inaccuracy in the fuel oil storage tanks' level indicators.
- Operators were notified of the above operating log changes for minimum required fuel levels by Night Order Book entries on September 3, 1993 and September 17, 1993.
- Weekly surveillance test 3PT-W1, "Emergency Support Systems Inspection," Alarm Response Procedure 11 ARP-11, "Panel SHF - Electrical," and System Operating Procedure EL-9 (SOP-EL-9), "Filling Diesel Fuel Oil Storage Tanks" will be revised to reflect the minimum required fuel level as calculated in IP3-CALC-EG-00217 plus an allowance for the uncertainty of the level indication method used to determine actual level in the tanks. This will be completed prior to plant startup.

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- A request for an amendment to IP3's Technical Specification sections 3.7.A.5 and 3.7.F.4 will be submitted to reflect the minimum required fuel level as calculated in calculation IP3-CALC-EG-00217. This will be completed prior to plant startup.
- A sample of modification packages where setpoints were changed and the 10CFR50.59 review indicated that a change to Technical Specifications was not required will be reviewed to determine the extent of this condition. This will be completed prior to plant startup.
- MMP 90-3-116 EDG will be revised to indicate that a Technical Specification change is required. This will be completed prior to plant startup.
- The lessons learned from the event will be discussed with the engineering staff to reinforce the necessity for attention to detail.
- Modification Control Manual procedure MCM-8, "Setpoint Control," has been drafted to establish a method for controlling, revising, adding, analyzing and documenting setpoint changes made to equipment at IP3 and FitzPatrick. This procedure will be made effective on December 3, 1993.
- The EDG fuel oil storage tank level indicator calibration procedures will be revised to ensure the proper underground fuel oil storage tank penetration (see mark 11 on WEDCO corporation drawing FP 9321-05-2990-0) is used for sounding the tanks. This will be completed prior to plant startup.
- Operations and I&C personnel will be trained to use the proper sounding penetration when sounding the tanks. This will be completed prior to plant startup.

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ANALYSIS OF EVENT

This event is reportable under 10CFR50.73(a)(2)(ii)(B) wherein any event or condition that resulted in the nuclear power plant being outside design basis shall be reported. The design basis requires a minimum of 5238 gallons of usable fuel in each EDG fuel oil storage tank when the plant is above cold shutdown. From December 4, 1992 to December 24, 1992, the plant's operating logs indicate that this design basis had been potentially violated. Although there was no evidence that the CCR's "Diesel Gen. Oil Storage Tank Low Level" alarm had alarmed during that period, the failure to amend the Technical Specifications' minimum required fuel volume placed the plant in a position where the minimum usable volume of 5238 gallons would not have been maintained. There have been no similar LERs submitted.

SAFETY SIGNIFICANCE

This event had no significant effect on the health and safety of the public. This event affected the minimum fuel volume values for all three EDGs that are required to meet the design basis in the FSAR. During the period of this event, the lowest recorded total fuel volume in all three EDG fuel oil storage tanks was 18800 gallons. Subtracting the effect of the inaccuracy in the tank level indicators and the unusable fuel for each tank based on calculation IP3-CALC-8G-00217 yields a total usable fuel volume of 14864 gallons. The FSAR assumes that if 10700 gallons of fuel are usable, two EDGs could supply the minimum safeguard loads for at least 48 hours. Therefore, the design basis requirement for Technical Specification section 3.7.A.5 was not violated. Although there were short periods when one EDG was out of service during this event and because the EDG fuel oil storage tanks can be cross connected to transfer fuel, there was no time when an adequate fuel volume was unavailable. Since all three EDG fuel oil transfer systems were operable, this usable volume of 14864 gallons would be available to supply fuel to the two minimum required operable EDGs.