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June 20, 1994
C311-94-2094

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Dear Sir:

Subject: Three Mile Island Nuclear Station, Unit 1 (TMI-1)
Operating License No. DPR-50
Docket No. 50-289
LER 94-003-00

This letter transmits Licensee Event Report (LER) 94-003-00 concerning the inadvertent level reduction of the sodium hydroxide (NaOH) tank due to personnel error. Public health and safety were not affected.

This LER is submitted pursuant to 10 CFR 50.73. Attached is an abstract which provides a brief description of the event. For a complete understanding of the event, refer to the full text of the report.

Sincerely,

T. G. Broughton
Vice President and Director, TMI

AWM

Attachment

cc: Region I Administrator
TMI-1 Senior Project Manager
TMI Senior Resident Inspector

9406270349 940620
PDR ADDCK 05000289
S PDR

JEFF

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) THREE MILE ISLAND, UNIT 1	DOCKET NUMBER (2) 05000289	PAGE (3) 1 OF 05
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TITLE (4)
INADVERTANT LEVEL REDUCTION OF THE NaOH TANK DUE TO 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
05	23	94	94	--003	-- 00	06		94	FACILITY NAME	DOCKET NUMBER 05000
									FACILITY NAME	DOCKET NUMBER 05000

OPERATING MODE (9)	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)
POWER LEVEL (10)	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)	X	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 A. W. Miller, TMI Licensing Engineer	TELEPHONE NUMBER (Include Area Code) 717-948-8128
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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)

TMI-1 was operating at 100% power. On May 23, 1994 during the performance of prerequisites for Technical Specification (TS) Surveillance Procedure 1303-5.1, an Auxiliary Operator failed to follow established operator work practices and incorrectly reduced the level of the Sodium Hydroxide Tank (NaOH) so that the Borated Water Storage Tank (BWST)/NaOH tank differential levels were beyond the required TS limit for approximately 2 hours. The root cause of this event was personnel error. TS 3.3.1.3.b requires that the NaOH tank be maintained at 8 ft. +/- 6 inches lower than the BWST as measured by the BWST/NaOH tank differential pressure indicator. This condition is reportable under 50.73.a.2.i.B. Having the NaOH tank outside of the required specification for approximately 2 hours had low safety significance since iodine removal enhancement was only marginally reduced in this condition and the probability of having a design basis accident during this short time period was very low. Management will review work practice requirements with all operators and ensure training programs contain proper emphasis. The applicable administrative requirements and computer alarms will be reviewed to determine need for changes.

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

INADVERTENT LEVEL REDUCTION OF THE NaOH TANK DUE TO PERSONNEL ERROR

I. Plant Operating Conditions Before Event:

TMI-1 was operating at 100% rated power.

II. Status of Structures, Components, or Systems that were Inoperable at the Start of the Event and that Contributed to the Event:

None.

III. Event Description:

Technical Specification Surveillance Procedure 1303-5.1, "RB Emergency Cooling and Isolation System Logic Channel/Component Test," is a quarterly surveillance that was scheduled for the 7-3 operating shift on May 23, 1994. Operations performs certain prerequisites for Technical Specification Surveillance procedures a shift prior to actual performance. Thus, in preparation for 1303-5.1, the 11-7 shift was assigned prerequisite tasks.

During shift turnover on May 22, 1994 at approximately 2315 the Shift Foreman (SF) discussed the prerequisite tasks for this surveillance with the operating crew. The SF verbally provided an Auxiliary Operator (AO) the following two prerequisite tasks: 1) uncapping and installing a tygon tube to four drain valves in the Reactor Building Spray System [BE/DRNV]¹ -- BS-V-50A, BS-V-56A, BS-V-50B, BS-V-56B; and 2) uncapping, installing a tygon tube, and draining to a floor drain the line at BS-V-47A and BS-V-47B.

About an hour later, prior to starting the tasks the AO called the SF and briefly discussed the task associated with

¹ The Energy Industry Identification System (EIIS), System Identification (SI) and Component Function Identification (CFI) Codes are included in brackets, "[SI/CFI]", where applicable, as required by 10 CFR 50.73 (b)(2)(ii)(F).

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BS-V-50A/B and BS-V-56A/B. This discussion only included mention of the valves and no specific actions, e.g. only attaching tygon hose.

The assigned AO performed the prerequisite tasks associated with Surveillance Procedure 1303-5.1, but in addition to installing the tygon cubes to BS-V-50A/50B/56A/56B the AO incorrectly opened BS-V-50A/50B/56A/56B which initiated draining the NaOH tank [BE/TK] to the auxiliary building sump. This condition was detected by a Control Room Operator as an increasing level trend on the auxiliary building sump level recorder [WD/TKLR], while taking his shiftly log readings. The computer alarm associated with NaOH/BWST delta pressure did not actuate during this event because the computer alarm setpoint, based on the BWST level and NaOH specific gravity, was incorrect. The AO assigned the tasks associated with ES-V-50A/B and BS-V-56A/E was contacted and, following discussion, was directed to close the valves that were opened.

Technical Specification (TS) 3.3.1.3.b requires that the sodium hydroxide (NaOH) tank shall be maintained at 8 ft. +/- 6 inches lower than the Borated Water Storage Tank (BWST) level as measured by the BWST/NaOH tank differential pressure indicator [BP/PDI]. The Shift Supervisor reviewed the computer readout and determined that the differential level was out of specification, with the BWST level too high by approximately 1 inch. The differential level was returned to the required specification range at 0258 on May 23, 1994 by reducing BWST level. The purpose of this TS is to ensure a pH value of between 8.0 and 11.0 for the solution sprayed within containment after a design basis accident. This event is reportable under 10CFR50.73.a.2.i.B as an event or condition prohibited by the Plant's Technical Specifications.

The root cause of this event was personnel error: "communication and administrative practices less than adequate." The task was acknowledged at shift turnover and understood. The AO failed to adequately communicate his intent in accordance with Administrative Procedure (AP) 1029, "Conduct of Operations," which provides management expectations for this type of activity. The intent of AP

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1029 is to notify Control Room personnel immediately prior to opening valves on an Engineered Safeguards (ES) system and again to notify the Control Room personnel following task completion. In addition, the AO should have questioned his actions since AP 1029 does not permit concurrent work affecting operability, e.g. operating valves, on redundant trains of an ES system without the Operations Director's permission.

IV. Component Failure Data:

None.

V. Automatic or Manually Initiated Safety System Responses:

No safety system responses were involved in this event.

VI. Assessment of the Safety Consequences and Implications of the Event:

Technical Specifications requires that the NaOH tank be maintained at 8 ft. +/- 6 inches lower than the BWST level as measured by the NaOH/BWST tank differential pressure indicator. The purpose is to ensure a pH value of between 8.0 and 11.0 for the solution sprayed into containment to provide effective iodine removal following a design basis accident (DBA). The computer points associated with the NaOH/BWST tank level requirements indicated that the differential level was out of specification high in the range of 1.197 to .797 inches. Although iodine removal enhancement would be marginally reduced in this condition, the containment spray system would still be available and would still be capable of removing substantially the same amount of iodine from the containment atmosphere in the event of a DBA. Also, the capability exists to make pH adjustments in the post accident timeframe.

The TMI-1 Individual Plant Examination process identifies an initiating event frequency of 6.4E-3 per year for all sized Loss of Coolant Accidents. Thus, the probability of occurrence during the approximately 1.7 hour period the NaOH tank was out of specification was 1.2E-6. Based on this low probability of occurrence and the minimal consequences

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discussed above, GPU Nuclear concludes that the safety significance of this event is low.

VII. Previous Events of a Similar Nature:

No previous LER'S were considered directly related to this event. However, an event occurred on January 29, 1993 that resulted in an AO bypassing both decay heat service coolers. Work practices were a contributing factor to that event. Notification to the Control Room immediately prior to commencing valve operations on an ES system is a work practice that could have aided in preventing this event. In addition, opening of valves on separate ES trains simultaneously requires Operations Director's permission. These work practices are defined in AP 1029.

VIII. Corrective Actions Planned:

1. Review AP 1029 Section 4.5, "Shift Operations Work Controls and Practices," for revision as a result of this event.
2. Review with all operators the importance of properly controlling activities on ES systems. Review the work control practices established in AP 1029 with licensed and non-licensed operators.
3. Review/evaluate the practice of performing prerequisites for ES testing to determine the need to proceduralize this practice.
4. Ensure the work control practices established in AP 1029 Section 4.5, "Shift Operations Work Control and Practices" are appropriately incorporated into the AO and licensed operator training programs.
5. Review the GPUN self checking concept, "Be SURE", with licensed and non-licensed operators.
6. Review the computer setpoint controls for NaOH/BWST delta pressure to assure computer alarms are correctly set.

These actions will be completed by December 15, 1994.