NRC FORM 366 (4-95) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 04/30/98

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND 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.

LICENSEE EVENT REPORT (LER)

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

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Three Mile Island, Unit 1	05000289	1 OF 5

TITLE (4)

MISSED SPENT FUEL POOL SAMPLE FOLLOWING A WATER ADDITION DUE TO A MISSING OPERATOR AID

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
2	04	98	98	002	0	3	03	98		
									FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9)	N
POWER LEVEL (10)	100

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (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)(ii)	50.73(a)(2)(x)
20.2203(a)(2)(i)	20.2203(a)(3)(ii)	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
20.2203(a)(2)(iv)	50.36(c)(2)	50.73(a)(2)(vii)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Adam Miller, TMI Licensing Engineer	(717) 948-8128

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).	X NO	EXPECTED SUBMISSION	MONTH	DAY	YEAR

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

On February 4, 1998, GPU Nuclear determined that the Spent Fuel Pool was not sampled in accordance with the requirements of the Technical Specifications Surveillance Requirement (SR) specified in Table 4.1-3, item 4, which requires sampling monthly and after each makeup. A review of work activities determined that no sample was taken following a water addition on January 23, 1998. This condition was found to be reportable in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition prohibited by Technical Specifications. An analysis determined that the filling activity could not have diluted the boron concentration significantly.

The primary reason for this event was determined to be a missing sign by the fill valve which serves as a reminder to the Operator to notify Chemistry and the Shift Supervisor at the completion of the fill process. The missing sign has been replaced and the Operator Turnover Checklist has been revised to include a requirement to notify the Chemistry Department of sample requirements if a water addition to the Spent Fuel Pool has either been initiated or completed during the shift.

There were no adverse safety consequences from this event, and the event did not affect the health and safety of the public.

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

I. Plant Operating Conditions before Event:

TMI-1 was operating at 100% steady state power prior to and during the event described in this LER.

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:

The TMI-1 Technical specifications Table 4.1-3.4 requires that the Spent Fuel Pool Water [DA]* be sampled monthly and after each makeup. Operating Procedure 1104-6 "Spent Fuel Cooling System" requires notification of the Chemistry Department at the completion of a Spent Fuel Pool water addition that a sample must be taken between 24 to 48 hours after the addition was completed.

Contrary to these requirements, a water addition was made to the Spent Fuel Pool on 01/23/98 (From 0918 to 1705) without the required follow-up water sample. Another addition was made to the Spent Fuel Pool on 01/27/98 (From 1410 to 1817). The Spent Fuel Pool was then sampled on 01/28/98 at 0430 and again on 01/29/98 at 0830. These samples exceeded the 48 hour sample requirement for the addition which was performed on 01/23/98.

During a routine review of work activities by the Chemistry Department, a Staff Chemist noticed that samples of the Spent Fuel Pool had been obtained on 01/28/98 and 01/29/98. He recognized that these samples were taken to comply with the requirement to sample the Spent Fuel Pool after each addition. The Staff Chemist identified a possible lack of formal tracking for samples after filling the pool to the Manager, Radwaste and Chemistry. The manager investigated the scope of the potential problem by reviewing two months of spent fuel pool boron concentration data and the computerized Control Room Logs. He found that there was no spent fuel pool boron data following an addition to the pool on 01/23/98. The manager submitted a CAP (Corrective Action Process) Form (T1998-0066) to document the missed sample.

IV. Identification of Root Cause

The Primary AO was notified at the shift turnover meeting of the intent to fill the Spent Fuel Pool. This task is coordinated with processing (i.e. purifying) water with the ECOLOCHEM system on the secondary plant. As water is processed on the secondary plant it is transferred to the Reclaimed Water Storage Tank on the primary plant. This tank is then used as the source tank to fill the Spent Fuel Pool. Towards the end of the shift the AO was notified of the intent to shutdown the ECOLOCHEM system which would in turn require securing the filling of the Reclaimed Water Storage Tank and the Spent Fuel Pool. When the Primary AO terminated the filling of the Spent Fuel Pool he made an entry in his log book and also notified the Control Room. He did not convey any sample requirement information to the Control Room. Contrary to the requirements of the Operating Procedure the Operations Department did not notify the Chemistry Department of the need to sample the Spent Fuel Pool and the Shift Supervisor did not track the need for the water sample on the Shift Supervisor's Turnover.

The task of filling the Spent Fuel Pool is considered a routine evolution that does not require the operator to actually use a copy of the Operating Procedure to perform the evolution. For this reason an Operator Aid is affixed to the wall directly behind the valve used to fill the Spent Fuel Pool in order to remind the Operator of the notification and sampling requirements. However, the Operator Aid was missing from the wall on 01/23/98 when the Spent Fuel Pool was filled. Therefore there was no Operator Aid available to serve as a reminder to the Operator to notify Chemistry and the Shift Supervisor at the completion of the fill process.

There has been one previous occurrence, June 13, 1996, where a water addition was made to the Spent Fuel Pool without the required follow-up sample being performed. (This is the first that resulted in an LER due to the recent change at TMI-1 concerning the reportability of a missed Tech Spec Surveillance). As a result of the previous occurrence, the procedure guidance contained in Operating Procedure 1104-6 "Spent Fuel Cooling System" was enhanced to require notification of the Chemistry Department of the required sample and to track the need for a sample on the Shift Supervisor's Turnover until the sample is taken and analyzed. As part of the procedure enhancement, an enclosure to the procedure was added to indicate that an Operator Aid is posted at the Reclaimed Water supply valve.

Factors which led to the failure to obtain the Tech Spec required sample of the Spent Fuel Pool following a water addition are:

- Pertinent information not transmitted
- Required procedure/document not followed
- Other (Installed Operator Aid) not provided (i.e. missing)

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

V. Automatic or Manually Initiated Safety System Responses:

No safety system responses occurred or were required to occur.

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

The failure to obtain a sample of the spent fuel pool following its fill on January 23, 1998 had no adverse safety consequences.

Section 5.4.1 of TMI-1 Technical Specifications states "When fuel is being moved in or over the Spent Fuel Storage Pool "A" and fuel is being stored in the pool , a boron concentration of at least 600 ppmb must be maintained to meet the NRC maximum allowable reactivity value under the postulated accident condition." It also states that "When fuel is being moved in or over the Spent Fuel Storage Pool "B" and fuel is being stored in the pool, a boron concentration of at least 600 ppmb must be maintained to meet the NRC maximum allowable reactivity value under the postulated accident condition. The bases of section 4.1 of the Technical Specifications states "The 600 ppmb limit in Item 4, Table 4.1-3 is used to meet the requirements of Section 5.4. Under other circumstances the minimum acceptable boron concentration would have been zero ppmb."

No movement of fuel was conducted between the time the spent fuel pool was filled on 1/23/98 and the next sample was taken on 1/28/98. If fuel movements had been planned, boron samples would have been taken in accordance with procedure 1505-1. The Technical Specifications Bases clearly indicate that no minimum boron concentration is needed in the spent fuel pool for safe plant operation, except during fuel movements. Because the boron concentration of the spent fuel pool is typically above 2500 ppmb (2897 ppmb following the fill) no normal filling operation (outside of filling because of a major leak in the pool, which was not on-going) could dilute the boron concentration significantly below its initial value.

VII. Corrective Actions:

A. Corrective Actions Taken:

1. A new Operator Aid has been posted at the valve which is used to fill the Spent Fuel Pool from the Reclaimed Water System.

2. The "Primary Auxiliary Operator Turnover Checklist" has been revised to include a requirement to notify the Chemistry Department of sample requirements if a water addition to the Spent Fuel Pool has either been initiated or completed during the shift.

B. Action Planned to Prevent Recurrence:

This LER will be reviewed by all of the appropriate personnel in the Operations and Chemistry Departments. The review will be documented and the documentation maintained by the Operations Department Administrator. This action will be completed within 30 days of the issuance of this LER.

* 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).