NON-PUBLIC?: N
ACCESSION #: 8603310265
LICENSEE EVENT REPORT (LER)

FACILITY NAME: Three Mile Island Unit 2 PAGE: 1 OF 3

DOCKET NUMBER: 05000320

TITLE: Exceeding Limit of Safety Evaluation Due to Procedural Inadequacy
EVENT DATE: 02/24/86 LER #: 86-004-00 REPORT DATE: 03/26/86

OTHER FACILITIES INVOLVED: DOCKET NO: 05000

OPERATING MODE: N POWER LEVEL: 000

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR SECTION:
50.73(a)(2)(ii)

LICENSEE CONTACT FOR THIS LER:
NAME: Robert B. Swartzwelder, TMI-2 TELEPHONE: (717) 948-8244
Licensing Engineer

COMPONENT FAILURE DESCRIPTION:
CAUSE: SYSTEM: COMPONENT: MANUFACTURER:
REPORTABLE NPRDS:

SUPPLEMENTAL REPORT EXPECTED: NO

ABSTRACT:

On February 24, 1986, at 0203 hours, operators transferred expended filter media to a holding drum using an approved procedure. It was later determined that the number of transfers exceeded a limit established in a Safety Evaluation Report (SER). The cause of the event was a failure to incorporate the SER transfer limits into the procedure. Upon determination of the error, further transfers were immediately prohibited until the relevant procedure was corrected. The procedure was corrected to incorporate the transfer limits as specified in the SER. The event is reportable pursuant to 10 CFR 50.73(a)(2)(ii)(c).

This LER is similar in nature to LER's 83-43, 83-51, and 84-02.

END OF ABSTRACT

I. PLANT OPERATING CONDITIONS BEFORE THE EVENT

The TMI-2 facility was in a long-term cold shutdown state; the defueling evolution is in progress. The reactor decay heat was being removed via loss to ambient. Throughout this event there was no effect on the Reactor Coolant System or the core.

II. STATUS OF STRUCTURES, CO
PONENTS, OR SYSTEMS THAT WERE
INOPERABLE AT THE START OF THE EVENT AND THAT CONTRIBUTED TO THE EVENT

N/A

III. EVENT DESCRIPTION

On February 24, 1986, at 0203 hours, operators made a transfer of diatomaceous earth and Reactor Vessel water filtrate from the Temporary Reactor Vessel Filtration System (TRVFS) to a storage drum intended as a receptacle for the filtrate. There is no applicable IEEE Code for this system. The operation was performed in accordance with an approved procedure. Upon review of processing information, it was discovered that the number of transfers to the exceeded those allowed by the SER. The docketed Safety Evaluation Report (SER), prepared for operation of the TRVFS, had established a limit of 10 transfers per storage drum. The procedure used for operation of the TRVFS did not reflect the SER transfer limits. Since the procedure failed to incorporate the docketed commitment to limit transfers, the event is reportable pursuant to 10 CFR 50.73(a)(2)(ii)(c). Initially, the SER had established the limit of 10 transfers based on volume available in the drum as opposed to safety concerns. However, the safety significance of the event was complicated by inappropriate assumptions in the calculations relating the amount of fuel in the filter material to filter housing dose rates; the method used to quantify buildup of fuel material in the pool filter; and thus, the measures taken to preclude criticality concerns. The revised calculations reduced the safety factors involved from approximately 5000 to approximately 130. This revision was discussed in GPU Nuclear letter 4410-86-L-0047 dated March 6, 1986.

This LER is similar in nature to LER's 83-43, 83-51, and 84-02.

IV. ROOT CAUSE OF THE EVENT

The root cause of the event was personnel error in that the preparation and review of the procedure failed to ensure the incorporation of SER transfer limits. The limit of 10 transfers per drum is considered to be a licensing basis commitment since it was stated in the SER used to license operation of the TRVFS.

V. CORRECTIVE ACTIONS

Immediate - Further transfers to the drum in question were prohibited. A new Process Instruction and Data Sheet was issued limiting transfers, per the SER, to ten (10) transfers per drum.

Long Term - A Procedure Change Request was issued to include the transfer limit of ten (10) transfers per drum as a procedure limit and precaution. Calculations were reviewed and rechecked to confirm the adequacy of the safety evaluation. Revision 1 to the SER was issued to reflect changes in the calculational model and results. This event will be reflected in future Responsible Technical Reviewer training.

VI. COMPONENT FAILURE DATA

None

VII. AUTOMATIC OR MANUALLY INITIATED SAFETY SYSTEM RESPONSES

None

VIII. ASSESSMENT OF THE SAFETY CONSEQUENCES AND IMPLICATIONS OF THE
EVENT

The safety limit for this operation was to limit the collection of fuel in the filter housing or the transfer drum to less than 70 Kg UOsub2. The primary control was to limit radiation levels in the filter housing to 3 R/hr - a factor of 5000 below the originally calculated radiation level for a filter with 70 Kg of fuel. The limit of ten (10) transfers per drum provided a second level of assurance that the safety limit would not be exceeded by assuring sufficient safety margin existed in the

drum. No reduction in the margin of safety occurred since one of the previous transfers occurred after less than 15 minutes of operation due to high differential pressure across the filter; i.e., compared to an average run time of over 6 hours. It is considered extremely unlikely than any significant fuel material was deposited on the filter during that time period. Samples of the transfer drum contents indicated that the amount of fuel in the drum after 11 transfers was approximately 500 grams; i.e., more than 2 orders of magnitude less than the safety limit.

ATTACHMENT 1 TO 8603320265 PAGE 1 OF 1

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4410-86-L-0052
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March 26, 1986

US Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Dear Sir:

Three Mile Island Nuclear Station, Unit 2 (TMI-2)
Operating License No. DPR-73
Docket No. 50-320
Licensee Event Report 86-04

Attached is Licensee Event Report 86-04 concerning the failure to incorporate limits specified in a licensing commitment into an operating procedure. The event occurred on February 24, 1986.

This event is considered reportable pursuant to Title 10 of the Code of Federal Regulations, Section 50.73(a)(2)(ii)(c).

Sincerely,

F. R. Standerfer
Vice President/Director, TMI-2

FRS/RBS/eml

Attachments

cc: Regional Administrator - Office of I & E, Dr. T. E. Murley
Director - TMI-2 Cleanup Project Directorate, Dr. W. D. Travers

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