

NON-PUBLIC?: N
ACCESSION #: 9105090340
LICENSEE EVENT REPORT (LER)

FACILITY NAME: THREE MILE ISLAND UNIT 2 PAGE: 1 OF 03

DOCKET NUMBER: 05000320

TITLE: PROCESSED WATER DISPOSAL SYSTEM VALVE MISALIGNMENT
EVENT DATE: 04/03/91 LER #: 91-003-00 REPORT DATE: 05/03/91

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)(i)

LICENSEE CONTACT FOR THIS LER:
NAME: E. D. Schrull - TMI Licensing TELEPHONE: (717) 948-8832
Engineer

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

SUPPLEMENTAL REPORT EXPECTED: No

ABSTRACT:

On April 3, 1991, the TMI-2 Processed Water Disposal System (PWDS) was operating in the "coupled mode" (i.e., evaporator coupled to the vaporizer) when a vaporizer blow-down valve was found closed. The purpose of this flow pathway is to draw-off solids from the vaporizer flash tank and recycle them to the evaporator for solidification and disposal. The closure of the blow-down valve has the potential to adversely impact the system decontamination factor (DF) of the PWDS; however, no impact was observed.

The event was a result of personnel error in that the evaporator operator did not follow the operating procedure. A contributing factor was an unwieldy procedure that did not lend itself to ease of use. Upon discovery of the mispositioned valve, the immediate corrective action taken was to open the valve and notify the TMI-2 Control Room. Longer term corrective actions include additional training for the evaporator

operators and a revision to the PWDS operating procedure.

TMI-2 Tech. Spec. 3.9.13 states, "ACCIDENT GENERATED WATER shall be disposed of in accordance with NRC-approved procedures." Per the NRC-approved PWDS operating procedure, the blow-down valve was required to be open during coupled mode operations. Therefore, PWDS operation in this manner, although inadvertent, was prohibited by the plant's Tech. Specs. and the event is reportable per 10 CFR 50.73(a)(2)(i)(B).

This event is similar in nature to LER 91-02.

END OF ABSTRACT

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I. PLANT OPERATING CONDITIONS BEFORE THE EVENT

The TMI-2 facility was in Mode 3. The TMI-2 PWDS was operating in the "coupled mode." In the coupled mode of operation, accident generated water (AGW) is pumped to the evaporator where it is processed into two forms: a concentrated liquid waste and a purified liquid distillate. The concentrated waste is then dried to a solid waste form and packaged for transport and burial. The liquid distillate is pumped to the vaporizer where it is discharged to the atmosphere as steam. The process operates in a continuous flow mode with the evaporator and vaporizer coupled.

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

N/A

III. EVENT DESCRIPTION

On April 2, 1991 at 9:30 p.m., the TMI-2 PWDS was operating in the coupled mode when an evaporator shutdown was initiated due to receipt of a low pump discharge pressure signal. An evaporator operator trainee conducted the majority of the shutdown per the evaporator operating procedure, i.e., he closed valves V-23, V-57, and V-58 per the operating procedure. Valve V-23 is the vaporizer blow-down valve WD/LOV! to the evaporator; valves V-57 and V-58 WD/ISV! isolate the vaporizer by preventing flow past the vaporizer influent radiation monitor (PWD-RML-1) WD/MON!. After the shutdown, the trainee became involved in performing a dump of the blender/dryer. At 12:05 a.m. on April 3, 1991, after resolution of

the low pump discharge pressure signal matter, startup of the PWDS was initiated by the more experienced evaporator operator. The evaporator operator's past practice during a short-term shutdown was not to close the above-mentioned three valves; this practice was not in accordance with the relevant procedure. At 12:45 a.m. on April 3, 1991, the evaporator operator noted that valves V-57 and V-58 were closed; he reopened them to permit flow to the vaporizer. However, he failed to realize that valve V-23 remained closed.

Shift turnover occurred at 6:00 a.m. on April 3, 1991. The oncoming shift evaporator operator was monitoring the system when he discovered V-23 closed at 6:20 a.m. He immediately reopened the valve and notified the Unit 2 Control Room. System operation continued normally thereafter.

The purpose of the flow path through V-23 is to draw-off solids from the vaporizer flash tank and recycle them to the evaporator for solidification and disposal. The closure of the blow-down valve during vaporizer

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operations has the potential to cause accumulation of solids in the vaporizer flash tank and adversely impact the system DF of the PWDS; however, no impact was observed.

IV. ROOT CAUSE

The root cause of the event was personnel error by the evaporator operator; the PWDS operating procedure was not followed. It was poor work practice on his part to circumvent the operating procedure for short-term shutdowns. A contributing factor was an unwieldy procedure that did not lend itself to ease of use.

V. CORRECTIVE ACTIONS

Upon discovery of the mispositioned valve, the immediate corrective action taken was to open the valve and notify the TMI-2 Control Room. This event is currently the subject of a Human Performance Enhancement System (HPES) review. Longer term corrective actions include additional training session for the evaporator operators and a revision to the PWDS operating procedure. The training session was held on April 18, 1991; the procedure revision has been drafted and is expected to be approved by May 6, 1991.

VI. COMPONENT FAILURE DATA

N/A

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

No safety function is performed by valve V-23. The purpose of the flow path through V-23 is to draw-off solids from the vaporizer flash tank and recycle them to the evaporator for solidification and disposal. The closure of the blow-down valve has the potential to cause accumulation of solids in the vaporizer flash tank and adversely impact the system DF of the PWDS; however, no impact was observed.

Thus, this event did not pose a potential public health and safety concern.

VIII. PREVIOUS EVENTS OF A SIMILAR NATURE

LER 91-02

* 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).

ATTACHMENT 1 TO 9105090340 PAGE 1 OF 1

GPU Nuclear GPU Nuclear Corporation
Post Office Box 480
Route 441 South
Middletown, Pennsylvania 17057-0191
717 944-7621
TELEX 84-2386
Writer's Direct Dial Number:

(717) 948-8400

May 3, 1991
C312-91-2029
C000-91-1291

US Nuclear Regulatory Commission
Washington, DC 20555

Attn: Document Control Desk

Dear Sir:

Three Mile Island Station Unit 2 (TMI-2)
Operating License No. DPR-73
Docket No. 50-320 Licensee Event Report 91-03

Attached is Licensee Event Report 91-03 concerning a valve in the TMI-2 Processed Water Disposal System that was not aligned in accordance with NRC-approved procedures.

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

Sincerely,

R. L. Long
Director, TMI-2

EDS/dlb

Attachment
cc: T. T. Martin - Regional Administrator, Region I
M. T. Masnik - Project Manager, PDNP Directorate
L. H. Thonus - Project Manager, TMI Site
F. I. Young - Senior Resident Inspector, TMI

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