

LER 83-04/03L-0
EVENT DATE - February 18, 1983

I. EXPLANATION OF OCCURRENCE

On February 16, 1983, while performing Surveillance Procedure 3303-M1, "Fire System Valve Lineup Verification", it was realized that the Unit 2 Air Intake Tunnel (AIT) sump level had risen such that there was standing water on approximately $\frac{1}{2}$ of the AIT floor. Investigation determined that the AIT water deluge piping had developed leaks. Therefore, at 0942 hours, the AIT Deluge System was declared inoperable.

In order to commence the above surveillance, the AIT Halon System was disabled to prevent unnecessary actuation of the Halon System and its interlocks with other plant systems. When the Halon System was restored to service at 1010 hours, a trouble alarm was received for one of the four zones. As a result, the zone was declared inoperable.

After declaring the systems inoperable, an hourly firewatch was established and backup fire suppression capability was provided as required by the appropriate Technical Specification Action Statements.

The Deluge System and the Halon System were returned to operable status at 2225 hours on March 1, 1983.

The above conditions resulted in entering the Action Statements of Technical Specifications 3.7.10.2, "Deluge/Sprinkler Systems", and 3.7.10.3, "Halon System". Due to the inadvertent entry into the Action Statements and compliance with the Action Statement requirements, this event is considered reportable pursuant to Section 6.9.1.9(b) of the Recovery Technical Specifications.

II. CAUSE OF THE OCCURRENCE

Examination of the Deluge System resulted in locating two leaks. Both were on the upstream side (water charged side) of the respective deluge isolation valves. A $\frac{1}{2}$ inch 'T' fitting on Deluge Valve FS-V-431A ruptured and a $\frac{1}{2}$ inch line strainer cracked on Deluge Valve FS-V-429A. The failures are believed to have been caused by freezing of the lines due, in turn, to a failure of their protective heat trace circuits.

Because of the leakage through the fittings and partly due to on-going groundwater inleakage into the AIT, the sump water level rose and eventually overflowed onto the AIT floor. As a result, - one or two Halon System heat detectors were submerged as well as the AIT Chlorine Monitor Discharge Tube. (Reference LER 83-05/03L-0 regarding Chlorine Monitor inoperability.)

Two conditions existed that, together, allowed the sump level to exceed normal levels. First, the AIT normal and emergency sump pumps were de-energized in accordance with the applicable TMI-2

procedures to prevent inadvertent discharge to the yard drains prior to sump water sampling; and second, both the sump's HI and HI-HI level alarms failed. With both level alarms failed, no indication of the rising sump level was available.

The causes of the deluge line heat tracing failure and the failure of the AIT sump level alarms have not been determined. Investigations are continuing. This LER will be updated when the investigations are completed.

III. CIRCUMSTANCES SURROUNDING THE OCCURRENCE

At the time of the occurrence, the Unit 2 facility was in a long-term cold shutdown state. The reactor decay heat was being removed via loss to ambient. Throughout the event there was no effect on the Reactor Coolant System or the core.

IV. CORRECTIVE ACTIONS TAKEN OR TO BE TAKEN

The AIT sump was pumped out and the $\frac{1}{2}$ inch fittings on Deluge Valves FS-V-429A and 431A were replaced. Two Halon System heat detectors were replaced. Both the Halon System and the Deluge System were returned to service at 2225 hours on March 1, 1983.

The heat tracing on the deluge valves was replaced on March 11, 1983. The sump level alarms are currently being repaired.

V. COMPONENT FAILURE DATA

The $\frac{1}{2}$ inch fittings were commercial grade components, therefore, no additional information is available.

Specific information on the heat tracing, heat detectors, and level alarms will be provided, as appropriate, in the update report.



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March 21, 1983
4410-83-L-0062

Office of Inspection and Enforcement
Attn: Mr. Ronald C. Haynes, Director
Region I
US Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406

Dear Sir:

Three Mile Island Nuclear Station, Unit 2 (TMI-2)
Operating License No. DPR-73
Docket No. 50-320
Licensee Event Report 83-04/03L-0

Attached please find Licensee Event Report 83-04/03L-0 concerning the inoperability of the Unit 2 Air Intake Tunnel Deluge System and the Halon System on February 18, 1983.

This event concerns Sections 3.7.10.2 and 3.7.10.3 and is considered reportable under Section 6.9.1.9(b) of the Interim Recovery Technical Specifications.

Sincerely,

B. K. Kanga
Director, TMI-2

BKK/SDC/jep

Attachments

CC: Mr. L. H. Barrett, Deputy Program Director - TMI Program Office
Dr. B. J. Snyder, Program Director - TMI Program Office