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June 7, 1982
4400-82-L-0090

TMI Program Office
Attn: Mr. L. H. Barrett, Deputy Program Director
U. S. Nuclear Regulatory Commission
c/o Three Mile Island Nuclear Station
Middletown, Pennsylvania 17057

Dear Sir:

Three Mile Island Nuclear Station, Unit 2 (TMI-2)
Operating License No. DPR-73
Docket No. 50-320
Personnel Airlocks

Your letter, NRC/TMI-82-026, dated April 26, 1982 cited several dates that a Reactor Building entry was delayed or cancelled due to malfunctioning airlock doors and asked GPU to respond to several questions. The responses to these questions are contained on the attached. GPU shares your concern with potential personnel and equipment problems and GPU believes the actions being performed, as discussed in the attachment, should alleviate these concerns.

Sincerely,

J. J. Barton
Acting Director, TMI-2

JJB:JJB:djb

Attachment

cc: Dr. B. J. Snyder, Program Director - TMI Program Office

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ATTACHMENT

Question No. 1:

Is the current design/condition of the airlocks adequate to support safe operations within the containment?

Response:

GPU has discussed the Personnel Airlocks (PAL) design with a representative of the manufacturer of the TMI-2 PAL, Pittsburgh Des Moines Steel Corporation (PDM). The PDM representative informed us that several nuclear plants have PDM PAL similar to TMI-2 and that the basic airlock has not had to be changed.

The PDM representative further informed GPU that problems associated with these airlocks are generally due to inadequate training on airlock operation. (See response to question #3).

The current condition of the PAL is somewhat different from the original design in that the differential pressure interlock feature has been defeated and some junction box wiring has been modified.

A program has been initiated to return these modifications to the original design condition. The completion date for this program is dependent on replacement material availability. In the interim selected personnel have been trained in the operation of the PAL in its present condition and have been assigned to PAL duty during Reactor Building entries to further ensure entries are conducted safely. Additionally, emergency tool kits will be placed in each airlock and in the Reactor Building with instructions for their use if it should be required.

Question No. 2:

What steps have been taken to correct the airlock malfunctions which were identified during the post accident entries?

Response:

The following list details the problems associated with the airlocks during the post accident entries and the actions taken to correct them.

- October 16, 1980 - The solenoid on the outer door of Personnel Airlock (PAL) No. 1 was corroded so that the outer door could not be opened. This was the first time this airlock was used since the accident, therefore, some problems could be expected.

- June 25, 1981 - A pin fell out of the universal connection of the airlock interlock shaft on PAL No. 2 which caused the interlock to become misaligned and jammed both airlock doors. Maintenance repaired the mechanism and cycled the outer door but not the inner door.

- July 1, 1982 - The inner door on PAL No. 2 did not open and it was necessary to defeat the interlock to open the inner door (NOTE: This door was not cycled following the repair performed after the June 25, 1981, entry.). The mechanism was checked and both doors were cycled. This problem is clearly related to the June 25, 1981, entry and not a separate instance.

- July 20, 1981 - No entry was scheduled for this day as discussed with a member of your staff. The July 1, 1981, instance (which was not noted in your letter) is the correct date.

- March 19, 1982 - While exiting the buildings, the entry teams encountered problems with the operation of both the inner and outer doors of PAL No. 2. It was subsequently discovered that the problem was caused by improper door operation. Problems of this nature in the future will be prevented by the training program.

- April 14, 1982 - The differential pressure interlock on PAL No. 2 failed due to failed solenoid which was repaired. However, the door was opened prior to performing the repair by personnel knowledgeable in airlock operation so that personnel in the Reactor Building could exit. Additionally, the attempt to open inner door of PAL No. 1 failed. These events caused the airlock inspection program and the airlock training program to be instituted.

Additionally, the response to Question 1 discusses the non-design conditions found in the PAL's during inspections conducted during Containment Entry #59 conducted on April 28, 1982. We are also performing a lubrication program on both PAL's to provide for smoother PAL operation.

Question No. 3:

What steps have been taken to ensure that personnel involved with Reactor Building entries are thoroughly familiar with airlock design, operations, and hazards?

Response:

As mentioned in the response to Question No. 1 above, a training program has been conducted on PAL design, operation, and hazards with selected personnel. Additionally, personnel trained using this program will be present in the anteroom or command center during further Reactor Building entries to assist should a problem occur.

Question No. 4:

What routine surveillances could be performed to assure that alternate equipment hatch airlock is operable? Please include proposed surveillances as a requested change to the Recovery Operations Plan.

Response:

An evaluation of what surveillances could be performed to ensure the alternate equipment hatch airlock is operable is currently in progress. The results of this evaluation will be provided to the NRC with a proposal on how to implement these surveillances by June 30, 1982.