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June 7, 1984  
5211-84-2140

Office of Nuclear Reactor Regulation  
Attn: D. G. Eisenhut  
Division of Licensing  
U. S. Nuclear Regulatory Commission  
Washington, D.C. 20555

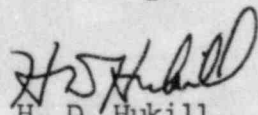
Dear Mr. Eisenhut:

Three Mile Island Nuclear Station, Unit I, (TMI-1)  
Operating License No. DPR-50  
Docket No. 50-289  
Correction to Salem ATWS Response (GL 83-28)  
Sent May 9, 1984 (5211-84-2107)

On May 9, 1984 we submitted our GPU Nuclear letter 5211-84-2107, which included a response (page 2) to the shunt trip circuit classification and separation concerns for this issue.

Attached is a corrected copy of page 2, as indicated by a margin bar. The information removed from this sentence was included in error and should be deleted. This corrected page should replace any copies of the original page 2 which have been included in your records.

Sincerely,

  
H. D. Hukill,  
Director, TMI-1

HDH/JGB/mle  
Attachment

cc: R. Conte  
J. Van Vliet

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4. Identify the classification (safety related or not) and separation (train or channel identification) for the reactor trip shunt and UV trip circuits, power supplies, and any interface isolation devices.

Response

The U/V trip circuits, because they are part of the Reactor Protection System (RPS), are classified Nuclear Safety Related. Channel separation inherent in the existing RPS is maintained in accordance with the TMI-1 plant criteria for Class 1E circuit routing except as analyzed in the following case.

Each of the 4 RPS trip circuits is run in an individual channelized conduit. In an isolated case, these channelized conduits are not separated by 1 inch of free air space. Since either shorting or opening of the circuits in that area results in the trip of the associated circuit breakers; and because the only circuits in those conduits are the trip circuits, the worst case event resulting from a multi-channel circuit failure would be a reactor SCRAM. Considering that the failure mode is such that the required safety function is preserved, it is unnecessary to revise the routing of these circuits.

The power supplies for the U/V and shunt trip devices are channelized safety related circuits. Channel separation will be maintained in cable routing in accordance with the TMI-1 plant criteria for Class 1E circuit routing except as analyzed in the following case.

The "A" channel (red) and the "B" channel (green) DC circuits feeding the shunt trip coils in the AC reactor trip breakers are routed in individual conduits. These conduits are less than one inch apart over a six foot span in one isolated area. Using the analysis performed in GPUN engineering studies on raceway separation for raceway originating fires, and considering that the DC shunt trip circuits are the only circuits in the conduits, there would be insufficient heat generated from a failure of one circuit to effect the circuit in the adjacent conduit. Therefore, it is unnecessary to revise the routing of these circuits.

The shunt trip circuit in the original TMI-1 design is used in the primary (AC) CRDM circuit breakers. It was not designated as safety related because it interfaces with the non-safety related source interrupt device. The source interrupt trips the AC breakers on supply bus undervoltage or loss of off-site power. This function is to protect the holding coils for the control rod drives and is not considered safety related.

Per this modification, isolation between the upgraded safety related shunt trip circuit and the non safety source interrupt circuit will be provided via fuses properly coordinated with the main circuit feeder fuse. Furthermore, the interface isolation of the shunt trip circuit with the source interrupt circuit will be accomplished by the contact to coil isolation of a qualified relay.

The interface between the 15 power supply and the loss of DC control power alarm is accomplished through the coil to contact isolation of a qualified relay.