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August 1, 1984
5211-84-2193

Office of Nuclear Reactor Regulation
Attn: J. F. Stolz, Chief
Operating Reactor Branch No. 4
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Sir:

Three Mile Island Nuclear Station, Unit 1 (TMI-1)
Operating License No. DPR-50
Docket No. 50-289
Intermediate Building Flooding Modification

In our letter of April 16, 1984 (5211-84-2095) GPUN evaluated Intermediate Building flooding due to a Main Feedwater Line Break (MFLB) and indicated that there was reasonable assurance that the operator could terminate flooding before EFW components not qualified for submergence would be adversely affected (5.5 minutes). In the intervening time, engineering on the long term EFW modification for the structural portion associated with Intermediate Building flooding has proceeded and the modifications listed below have been installed (as described in Section III.B.3 of our letter of August 23, 1983 (5211-83-232)). The operator now has approximately 25 minutes (TDR 250 Rev. 1) to terminate flooding in the Intermediate Building before EFW components not qualified for submergence would be adversely affected. The physical modifications include:

1. Remove the entire sealed door at both entrance "A" and "B" to the Tendon Access Gallery on El. 279' in the Alligator Pit.
2. Remove the entire western water "stop wall" and upper half of eastern water "stop wall" in the Alligator Pit.
- 3.* Install a sealed bulkhead door in the physical archway to the "C" Tendon Access Gallery (TAG) at El. 262' - 9-1/4" to prevent inleakage from the C access shaft to the TAG..
4. The electrical penetrations through the two south walls of the Alligator Pit from and to the Auxiliary and Fuel Handling Buildings will be made watertight for a flooded Alligator Pit.

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5. Upgrade the sealing capability of door A-4 in the Alligator Pit to resist water outleakage due to hydrostatic flood pressures in the Alligator Pit.
- 6.* Upgrade the sealing capability of the door at entrance "C" to the Tendon Access Gallery (located in the Alligator Pit) to resist water inleakage due to hydrostatic flood pressures in the "C" entrance.

* Not specifically needed for MFLB.

Further, GPUN has reviewed all the safety related circuits in Tendon Access Gallery and confirmed that only Kerite Cable in conduit for three circuits is used there. They are electrical cables CH34, CH47, and CH52 power circuits feeding the following Diesel Generator B auxiliary equipment (The A Diesel Generator is not impacted by Intermediate Building flooding):

AC Fuel Oil Transfer Pump (CH34)	Lube Oil Circulating Pump (CH47)
Air Start Compressor (CH52)	Pre-Lube Pump (CH47)
Jacket Coolant Heater (CH47)	Generator Space Heater (CH47)
Jacket Coolant Pump (CH47)	

The electrical power cables (for CH34, 47, and 52), are original plant supplied "Class 1E Qualified" Kerite type FR power cables with interlocked armor. An additional portion of cable in the lower Tendon Access Gallery will be subjected to submergence as a result of the modification. According to Kerite report, "Qualification Documentation for Kerite HTR/FR Power Cable," dated August 30, 1981, the cables were subjected to a 14-day water immersion (submergence) test and passed. Based on this report, GPUN qualified the Kerite cables for submergence in the lower Tendon Access Gallery for 14-days. Additionally, there are no electrical terminations in the flooded areas subsequent to a postulated MFLB and resulting lower Tendon Access Gallery flooding. The water in the Tendon Access Gallery could be pumped within 2 days below the level of these circuits by portable pumping equipment (Powdex Emergency Sump Pump) and temporary hose (200 ft.) which would transfer the water to the Turbine Building Sump at a rate of about 100 gpm.

In the very unlikely event that the TAG was not pumped out in 14 days, the discussion below indicates additional measures that would be taken to provide loss of function of the components noted above.

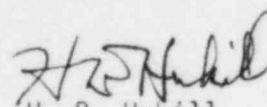
The AC Fuel Oil Transfer Pump is normally used to transfer fuel oil from the Main Fuel Oil Tank to the Fuel Oil Day Tank. This pump is backed up by a redundant 100 percent DC fuel oil transfer pump whose power cabling is not located in the lower tendon access gallery (will not become submerged in the case of a postulated main feedwater line break). This pump is started automatically upon a low-low level in the fuel oil day tank and is powered from the units 250 VDC system. Therefore, the loss of power to the AC fuel oil transfer pump will not be detrimental to the safety function of the diesel generator.

The Air Start Compressor maintains an amount of compressed air in the air cylinders which will guarantee a minimum number of 5 starts of the Diesel Generator. The compressor is automatically started when the pressure drops to 225 PSI and is automatically stopped when the pressure reaches 250 PSI. The compressor can be aligned to be driven by a backup diesel engine located on the skid by shifting belts, in case of failure of the electric motor (or loss of power to the motor). Therefore, loss of power to the Air Start Compressor Motor would not be detrimental to the safety function of the diesel generator.

The other affected Diesel Generator accessory equipment are for the B diesel generator: a) The Pre-Lube Pump which is used to provide additional lubrication prior to a manual start (not emergency start) of the Diesel Generator. In the case where this pump is inoperable, a redundant hand operated lube oil pump is available for a manual start. (b) The Lube Oil Circulating Pump, Jacket Coolant Pump, Jacket Coolant Heater and Generator Space Heater equipment are only energized when the diesel generator is not operated. This equipment is used to maintain the Diesel Generator components at an optimum "ready to start" condition. If the water cannot be pumped from the lower tendon access gallery for an extended period of time, a temporary power hook-up can be made to the Jacket Coolant Heater, Jacket Coolant Pump, Lube Oil Circulating Pump, Pre-Lube Pump and Generator Space Heater (one power feed), to maintain the Diesel Generator B in a optimum "ready to start" condition.

In conclusion, GPUN has completed installation of the Intermediate Building Flood Protection modification as indicated above which now allows 25 minutes without operator action before EFW components not qualified for submergence would be adversely affected. Cables located in the Alligator Pit and Tendon Access Gallery are environmentally qualified for well beyond the duration of the accident and contingency equipment is available to pump out this area.

Sincerely,



H. D. Hukill
Director, TMI-1

HDH:LWH:MRK:mt

cc: R. Conte
J. Van Vliet