GPU Nuclear

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November 9, 1984
5211-84-2255
RFW-0330

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

Dear Sir:

Three Mile Island Station Unit 1 (TMI-1)
Operating Licensing No. DPR-50
Docket No. 50-289
Environmental Qualification - SBLOCA/Radiation

By letter dated August 23, 1984 (5211-84-2217) GPUN provided an updated master list of electrical equipment located in a harsh radiological environment necessary to mitigate small break LOCA's and loss of main feedwater transients; and an affirmation that these components have demonstrated qualification for radiation levels associated with large break LOCA's in accordance with DOR Guidelines. On September 6 and 7, 1984 NRC staff representatives reviewed the results of all the SBLOCA radiation files and reviewed eight files in detail. On September 26, 1984 the NRC provided results of this audit. This letter provides a response to the NRC Staff comments identified in the September 26, 1984 letter and includes an additional item (seal injection flow transmitter qualification) as a result of our reevaluation.

HPI Pump Oil System

GPUN has reviewed the makeup pumps (MUP-1's) and the associated oil pump system and agrees that the auxiliary lube oil pump (MUP-2's) motors and their associated pressure switches (PS 479's) should be qualified and will be added to the SBLOCA master list. The makeup pump shaft driven gear oil pump is a strictly mechanical component which does not require qualification under 10 CFR 50.49. The auxiliary gear oil pump (MUP-4's) motors will not be qualified. [Therefore, failure of the shaft driven

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gear oil pump will result in the HPI pump (MUP-1) being declared inoperable.] The auxiliary lube oil pumps (MUP-2's) (General Electric 5K37J6403) are the same make and model as the main lube oil pumps (MUP-3's) and are considered in the same qualification status (see GPUN letter dated August 23, 1984 (5211-84-2217) Attachment 3). The auxiliary lube oil pump pressure switches (PS 479's) will be replaced by restart or a Justification for Interim Operation (JIO) will be provided.

HPI Pump Flow Indication

GPUN will add the high pressure injection (HPI) flow indication (MU-23-DPT, 1, 2, 3 & 4) to the SBLOCA master list. The HPI flow indication is being qualified to ensure that the operator has adequate flow indication at low flow conditions to prevent possible pump damage. These transmitters will be replaced and qualified by restart or a JIO will be provided. During the audit, GPUN presented a logic for exempting from environmental qualification the RCP seal injection flow transmitter MU-42-DPT. The logic showed that upon failure of this flow indicator procedural changes which would require isolation of seal injection (close MU-V-20) would be made in order to assure that a single operating HPI pump flow does not exceed the pump runout flow. We have reconsidered our position and presently desire to maintain seal injection services. Therefore, we will replace MU-42-DPT with a qualified unit by restart or a JIO will be provided rather than implement procedural changes.

LPI Flow Indication

GPUN will add the low pressure injection (LPI) flow indication (DH-1-DPT 1 & 2) to the SBLOCA master list and delete DPT-802 and 803. The LPI flow indication is being qualified to ensure the operator has adequate flow indication to balance LPI flow such that at least 1000 gpm is delivered to each flow path in the event that the postulated break location is at one of the reactor vessel core flood nozzles and only one LPI pump is available. These transmitters will be replaced with qualified units or a JIO will be provided.

Makeup Tank Level Indication

Concerning the makeup level tank indication (MU-14-LT and LT 778), GPUN has decided to replace the MU-14-LT Bailey transmitter with a qualified Rosemount transmitter. LT 778 is a qualified Rosemount transmitter. The makeup tank level indicator replacement is preferred to a procedural change (isolation of the makeup tank) because it allows greater operational flexibility during an accident with a single failure of a makeup tank level indicator. Therefore, these level transmitters will be added to the SBLOCA master list and MU-14-LT will be replaced with a qualified unit by restart or a JIO will be provided.

TransZorb Diodes Qualification

At the time of the audit, GPUN files did not contain a test report for the General Semiconductor Industries (GSI) Inc. TransZorb diodes, although the 1974-5 test results from Rockwell International and RCA were available in the EQ file. GPUN has contacted Rockwell and RCA, and they have reported to us that a formal test report was not written and that the test results, which we have, are the only documentation recorded.

GPUN has made other inquiries to determine if a formal test report is available on these devices which is applicable to our service. We have been unsuccessful to date in locating such a report. Therefore, GPUN will have a radiation qualification test of the TransZorb diodes performed. We currently expect the test to be completed in December, 1984. Should the test not be completed by restart, a JIO will be provided.

Incore Thermocouples Extension Cable Qualification

Finally, GPUN is pursuing parallel paths concerning the incore thermocouple extension cable qualification. The first path includes testing of the extension cable between the seal plate connector and the penetration to verify qualification. The second path involves the continuing evaluation of the extension wires based on vendor information and information gained from the TMI-2 post-accident instrumentation evaluation. The resolution of this item will be based on the results of the test and/or the evaluations. The evaluation based on the TMI-2 post-accident instrumentation is expected to be completed in December 1984. A test specification is under preparation. The schedule for completion of testing of the extension cable is not known at this time. Should the test or evaluation not be completed by restart, a JIO will be provided.

GPUN intends to respond to your letter of May 25, 1984 concerning the entire Environmental Qualification Program by November 30, 1984.

Sincerely,

R. F. Wilson
Director Technical Functions

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cc: R. Conte - NRC Resident Inspector
J. Stolz - NRC Chief Operating Reactors Branch No. 4
J. Van Vliet - NRC Project Manager TMI-1