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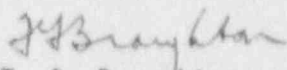
U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Dear Sir:

Subject: Three Mile Island Nuclear Station, Unit 1 (TMI-1)
Operating License No. DPR-50
Docket No. 50-289
GPU Nuclear Response to NRC Questions on
Three Mile Island Offsite Dose Calculation Manual

NRC letter dated March 19, 1992, provided results of the NRC review of the Three Mile Island Offsite Dose Calculation Manual (ODCM), Revision 0. Attached is the GPU Nuclear response to the NRC items contained in the referenced NRC letter. Since the NRC review, GPU Nuclear has issued Revisions 1 and 2 of the ODCM. Revision 2 was issued on May 22, 1992; a copy is included for your use.

Sincerely,


T. G. Broughton
Vice President and Director, TMI-1

DVH/emf

cc: TMI-1 Senior Project Manager
TMI Senior Resident Inspector

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ATTACHMENT I

CATEGORY A

NRC Item 1 - Section 1.2.1 should be revised to correct or clarify the methodology to determine liquid effluent monitor setpoints and flow rates. The present methodology for monitor RM-L6 can be interpreted to permit each radionuclide to contribute 10% of the 10 CFR 20 limits to offsite concentrations. (3.2)

GPU Nuclear Response - ODCM Section 1.2.1 has been revised to clarify the methodology for monitoring liquid releases.

NRC Item 2 - Sections 1.2.2 and 1.2.3 should be revised to unambiguously require that all radionuclides are accounted for, not I-131 only. (3.2).

GPU Nuclear Response - ODCM Section 1.2.2 was revised to state that the inputs for equation 1.1 shall include all radionuclides. Section 1.2.3 was revised to state that RM-L10 is no longer in service.

CATEGORY B

NRC Item 1 - Section 1.1 should identify the analyses used to determine the mixture of radionuclides to which the noble gas effluent monitors are calibrated. (3.4).

GPU Nuclear Response - The correct reference is Section 4.1. ODCM Section 4.1 has been revised to use Xe-133 equivalent as the basis of the setpoint concentration.

NRC Item 2 - In Sections 4.2 and 5.1.2, the controlling dose rate should be the dose rate to a child instead of an infant. (3.6.2)

GPU Nuclear Response - GPU Nuclear Technical Specifications Request (TSCR) No. 194, submitted on May 19, 1992, requested a change to Technical Specification 3.22.2.1 to reflect dose rate to a child. In addition, ODCM Sections 4.2 and 5.1.2 have been revised accordingly.

NRC Item 3 - In Section 2.1, the definitions of FD and FR, respectively, should identify the periods over which the plant dilution flowrate and river flowrate are determined. (3.7)

GPU Nuclear Response - The definitions of FD and FR have been revised to add "...during the period of release,...".

ATTACHMENT I

NRC Item 4 - Based on Table 4.3, maximum X/Q given for the station vent should apparently be $7.17E-7$ sec/m³ at 2413 m in the NNE.

GPU Nuclear Response - ODCM Section 5.2.1 has been revised to $7.17E-7$ for the maximum X/Q.

NRC Item 5 - Section 2.3 should contain a commitment to include a comprehensive statement of differences from the methodology of Section 2.1 with reported doses if an alternative method is used for a comprehensive of doses due to liquid effluents. (3.7)

GPU Nuclear Response - ODCM Section 2.3 was revised to include a statement on the use of SEEDS (Simplified Environmental Effluent Dosimetry System) as an alternative dose calculational methodology.

NRC Item 6 - Section 5.4 should contain a commitment to include a comprehensive statement of differences from the methodology of Section 5.2 with reported doses if an alternative method is used for a comprehensive assessment of doses due to gaseous effluents other than noble gases. (3.8.3)

GPU Nuclear Response - ODCM Section 5.4 was revised to include a statement on the use of SEEDS as an alternative dose calculation methodology.

NRC Item 7 - Sections 2.2 and 5.3, respectively, for projecting doses due to liquid and gaseous effluents, should include methodology to include a margin, based on operating data, for anticipated operational occurrences. (3.9)

GPU Nuclear Response - ODCM Sections 2.2 and 5.3 have been revised to include a description of methodology for projecting doses based on operating data.

NRC Item 8 - A Surveillance Requirement 4.22.4.2, requiring doses due to direct radiation to be determined in accordance with the methodology and parameters in the ODCM, should be added to the technical specifications. (3.11)

GPU Nuclear Response - TSCR No. 194, submitted by GPU Nuclear letter C311-92-2066, dated May 19, 1992, revised Surveillance 4.22.4.2.1 to include this requirement.

NRC Item 9 - The required methodology and data to determine the contribution of direct radiation to the dose limits of 40 CFR 190 should be added to the ODCM. For completeness, the dose contributions due to other nearby uranium fuel cycle sources should also be addressed in the ODCM. (3.11)

GPU Nuclear Response - This is now addressed in ODCM Section 7.1.

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NRC Item 10 - The Interlaboratory Comparison Program should be described in the ODCM. Also, to clarify the requirement, it would be advisable to reword the Technical Specification's Surveillance Requirement 4.23.3 to match the Surveillance Requirement of recent revisions of NUREG-0472. (3.13)

GPU Nuclear Response - This is now addressed in ODCM Section 8.3.

CATEGORY C

NRC Item 1 - In Section 1.1, "proportional" and "inversely proportional" should be interchanged in the definition of c. (3.2)

GPU Nuclear Response - The definition of c has been revised to correct this issue.

NRC Item 2 - Section 1.1 should include an expression identifying the total concentration to which the effluent monitors are calibrated (i.e., $c = \sum c_i$). (3.4)

GPU Nuclear Response - The correct reference is Section 4.1. ODCM Section 4.1 has been revised to use Xe-133 equivalent as the basis of the setpoint concentration.

NRC Item 3 - The 500 mrem/yr, 3000 mrem/yr, and 15 mrem/yr in the definitions for Equations 4.1.1, 4.12, and 4.2, respectively, should be identified as dose rates instead of doses. (3.4)

GPU Nuclear Response - ODCM Equations 4.1.1, 4.12, and 4.2 have been revised to identify dose rates.

NRC Item 4 - References to "Controls" and "Section II..." should be replaced or supplemented with appropriate technical specifications references. (3.4, 3.6.1)

GPU Nuclear Response - This item was previously incorporated in ODCM Revision 1.

NRC Item 5 - Section 1.3 should be more specific about what parts of Section 1.1 and 1.2 are used to implement the requirements stated in Section 1.3. (3.5)

GPU Nuclear Response - The item for Section 1.1 is addressed in NRC Item C.1 above. The item for Section 1.2 is addressed in NRC Item A.1.

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NRC Item 6 - The right side of Equation 5.2.2 should contain a summation over dose pathways. (3.8.3)

GPU Nuclear Response - A summation sign has been added to equation 5.2.2.

NRC Item 7 - For consistency with Section 1.2 of the ODCM and Technical Specification 3.2.1.1, the liquid effluent monitors shown in Figure 1.2 should be labeled RM-L6, RM-L10, and RM-L12, respectively, instead of RML-6, RML-10, and RML-12. (3.1)

GPU Nuclear Response - This is an editorial comment and was not incorporated. However, it will be considered in future revisions of the ODCM.

NRC Item 8 - For consistency with Section 4.3 of the ODCM and Technical Specification Table 3.21-2, the gaseous effluent monitors in ODCM Figure 4.1 should be labeled RM-7, RM-9, ..., respectively, instead of RMA-7, RMA-9, ... (3.3)

GPU Nuclear Response - Figure 4.1 was revised to incorporate this editorial comment.