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May 8, 1980  
TLL 217

TMI Program Office  
Attn: J. T. Collins, Deputy Program Manager  
U. S. Nuclear Regulatory Commission  
c/o Three Mile Island Nuclear Station  
Middletown, Pa. 17057

Dear Sir:

Three Mile Island Nuclear Station, Unit II (TMI-2)  
Operating License No. DPR-73  
Docket No. 50-320  
Evaporator/Solidification Facility TMI-II

The following responses to your comments on the Design Criteria Document for the Evaporator/Solidification facility are provided. Your comments were provided on October 23, 1979 in a letter from J. T. Collins to J. J. Barton.

ITEM 4.1.4

The solidification system selected is based upon the use of Stock Equipment Company components. These components are designed for use with 55 gallon drums.

ITEM 5.1.1

The design basis activity for decontamination solutions was assigned the value of 500  $\mu\text{Ci/cc}$ . At the time this value was assigned, the actual concentration of the solution could not be estimated with any reasonable assurance that the estimate was a good approximation. Therefore, it was believed that the assigned value of 500  $\mu\text{Ci/cc}$  was adequate, though conservative, for a design basis.

At this time, considerable knowledge has been gained to enable the estimation of the radioactive concentration of the decontamination solutions. Calculations have been performed, based on the removal of the "plug" from the containment interior surface, that yields an approximation for decontamination solution concentration of 0.3  $\mu\text{Ci/cc}$ . Assumptions used for this calculation are:

- a. The contamination level measured on the plug surface ( $38.7 \mu\text{Ci}/35\text{cm}^2$ ) is typical of the containment interior surfaces.
- b. The cylindrical portion of the containment interior represents 5% of the contaminated surfaces.
- c. The activity is removed by application of 100,000 gallons of decontamination solution.

*Handwritten:* A001 SE 1/10

The design basis activity for decontamination solutions has been revised to 100  $\mu\text{Ci}/\text{cc}$ . This revised concentration level, while considered conservative, will permit conservative shielding design and will ensure that system and facility design is adequate for higher than calculated concentration levels of contaminants in the decontamination solutions.

Item 5.1.2

On August 28, 1979, a sample extracted from the containment building sump exhibited a gross activity that indicated a concentration of 428  $\mu\text{Ci}/\text{cc}$ . On January 2, 1980 another sample was extracted and a concentration of 175  $\mu\text{Ci}/\text{cc}$  was indicated.

Present reactor coolant gross activity concentrations of approximately 100  $\mu\text{Ci}/\text{cc}$  are indicated.

Item 5.5.1

The second and third sentences of this section have been revised to read: "Operating areas with low occupancy rates (4 to 40 hours per week) such as the valve operating galleries, are designated as Radiation Zone III (2.5 to 25 mr/hr). Operating areas with high occupancy rates (40 hours per week) are designated as Radiation Zone II (0.5 to 2.5 mr/hr)."

Items 6.2 and 6.2.2

The requested items have been added to the criteria.

Item 6.6.3

The design of the building that houses the evaporator/solidification facilities complies with the guidance provided in Regulatory Guide 1.143. The foundation, sump and walls are of seismic design with sufficient volume to contain the entire contents of the evaporator/solidification system liquid inventory. In the unlikely event of aircraft accident, contaminated liquids released from the system would be totally contained.

Item 6.9

The requested elaboration of Regulatory Guide 1.143 has been incorporated.

Items 7.6.1 and 8.2

The phrase has been removed from the criteria, as requested.

Item 7.6.2

See Item 4.1.4.

Item 7.6.4

Only the permanent equipment is made of stainless steel, not the drums. The requirement for sufficient shield space to temporarily store approximately 100 filled drums has been added to the criteria. In addition, there is on-going work currently underway to construct interim storage facilities

for solidified wastes.

Item 7.12.2

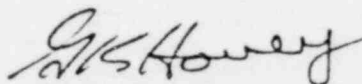
The criteria has been changed to indicate that the cold chemical system is in an area that is normally Radiation Zone II (0.5 to 2.5 mr/hr).

Item 7.13.4

Charcoal filters will not be required during recovery operations; they may be bypassed. Because the facility will be used during post-recovery operations as the Unit II waste handling facility, charcoal filters may be required.

The responses indicated above were agreed upon during a meeting with the NRC in early April, 1980. Revision 2 to the design criteria document is presently in preparation and will be forwarded when available.

Sincerely,



G. K. Hovey  
Director, TMI-II

GKH:LJL:hah

cc: B. J. Snyder