



Metropolitan Edison Company
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Writer's Direct Dial Number

December 4, 1980
TLL 632

TMI Program Office
Attn: Mr. John T. Collins, Deputy Director
U. S. Nuclear Regulatory Commission
c/o Three Mile Island Nuclear Station
Middletown, Pennsylvania 17057

Dear Sir:

Three Mile Island Nuclear Station, Unit 2 (TMI-2)
Operating License No. DPR-73
Docket No. 50-320
Submerged Demineralizer System

Your letter, NRC/TMI-80-143, dated November 7, 1980, forwarded questions concerning the subject system. You also requested that our TER be updated to address the information contained in ORNL/TM-7448. This letter is in response to your request.

Our TER, submitted under cover of our letter TLL 160, dated April 10, 1980, accomplishes the following objectives:

1. Provides the basis for the necessity to decontaminated the containment sump water and RCS water.
2. Provides a summary of the alternative methods for accomplishing the task.
3. Provides a summary system description and the system design criteria.
4. Provides an analysis of radiological considerations to workers and to the general public (population dose).
5. Provides a hypothetical accident analysis.
6. Provides an estimate of anticipated system performance.

Since the submittal of our TER, additional information has been made available through the publication of ORNL/TM-7448, Evaluation of the Submerged Demineralizer System (SDS) Flowsheet for Decontamination of High-Activity-Level Water at the Three Mile Island Unit 2 Nuclear Power Station, by the Oak Ridge National Laboratory. This information appears to be inconsistent with the TER information. We are aware of these apparent inconsistencies and have discussed various approaches available to achieve desired decontamination factors on the containment sump and reactor coolant system waters with members of the NRC staff. In fact, we have committed to them our intent to provide additional information concerning our approach to resolution of these apparent inconsistencies.

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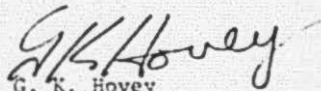
To place these apparent inconsistencies in perspective is appropriate. On the assumption that SDS processing of the radioactively contaminated water will commence July 1, 1981, the total contamination to be fixed is approximately 462,500 curies (exclusive of H-3). Using the decontamination factors of the Oak Ridge report and the SDS as currently configured, a total of approximately 462,400 curies will be fixed on the SDS resins. This capture ratio is representative of the fixing of 99.98% of the radionuclides that are presently in solution. The fixing of these contaminants is representative of a significant improvement in the potential for jeopardy to the public health and safety.

Furthermore, as you are aware, the SDS incorporates the capability for a relatively wide range of processing options. For example, in the event that SDS process effluent contains trace radionuclides that are in concentrations considered to be excessive, several options for further processing exist. They are:

1. Return SDS effluent to the reactor containment building.
2. Provide shielded storage for SDS effluent water, e.g., RC3Ts.
3. Polish SDS effluent utilizing EPICOR II.
4. Reconfigure resin loadings of SDS cation beds and polishing bed for removal of the trace contaminants.

Specific processing options, and the details associated with these options, will be provided in our revised TER. Enclosed, with this letter, are our responses to one of your questions forwarded on November 7, 1980. Additional responses will be forwarded as the information becomes available.

Sincerely,


G. K. Hovey
Vice-President and
Director, TMI-2

GKH:LJL:dad

Enclosure

cc: Bernard J. Snyder

COMMENT 1

Letter TLL 283 provided a list of piping and instrument drawings and general arrangement drawings. An up-to-date listing of these drawings is requested along with the latest revision of the drawing if the drawing has a later revision date than the one provided in TLL 283. Most of the drawings provided were "Issued for Approval". "Approved for Fabrication" drawings should now be available and we request that these drawings be provided.

RESPONSE

The drawings listed below are provided in accordance with your request. The drawing revisions provided are the appropriate diagrams in that they represent the current revision presently being used. They are enclosed.

<u>DRAWING NO.</u>	<u>REV.</u>	<u>TITLE</u>
2-M74-SDS01	1	P&ID SDS Feed and Monitor Tank
527C-A-5011	2	P&ID Dewatering Station
527D-A-5001	5	P&ID Supply Manifold
527D-A-5002	4	P&ID Contaminated Feed Water System
527D-A-5004	6	P&ID Off-gas and Liquid Separation System
527D-A-5005	2	Ion Exchange Flow Sheet
527D-A-5006	4	Intermediate Sampling Station
527D-A-5007	1	General Layout Plan - Ion Exchange Equipment
527D-A-5009	3	P&ID Beta Monitoring Manifold
527D-A-5010	1	Ion Exchanger Support Assembly Drawing
527D-A-5013	2	P&ID RCS Cleanup Manifold
527D-D-5002	2	Pre-Filter (125 micron)
527D-D-5003	3	Final Filter (10 micron)
527D-D-5012	0	Ion Exchanger Final Filter and Pre-Filter
527D-D-5013	1	Ion Exchanger and Final Filter

Those drawings having the same revision as our last submittal have not been included in this submittal. Additional drawings, developed since our last submittal, have been included.