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Michael T. Masnik
Three Mile Island Cleanup Project Directorate
Office of Nuclear Reactor Regulations
US Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Masnik:

Three Mile Island Nuclear Station, Unit 2 (TMI-2)
Operating License No. DPR-73
Docket No. 50-320
Comments of Draft Supplement 2 to the
Programmatic Environmental Impact Statement - Three Mile Island Unit 2

The purpose of this letter is to provide GPU Nuclear comment on Draft Supplement 2 to the Programmatic Environmental Impact Statement - Three Mile Island Unit 2 (PEIS). In addition to the detailed comments provided herein, the information provided in GPU Nuclear letters 4410-86-L-0018 dated February 3, 1987, and 4410-87-L-0023 dated February 18, 1987, should be considered as an integral part of our comments on Supplement 2.

Sincerely,


F. R. Standerfer
Director, TMI-2

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Attachments

cc: Director - TMI-2 Cleanup Project Directorate, Dr. W. D. Travers

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COMMENTS TO THE DRAFT SUPPLEMENT 2 TO THE
PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT - THREE MILE ISLAND UNIT 2

1. Summary, page VI - Radiation-induced cancer fatalities in the off-site population is different from that listed in pages 5.5, 6.1 and 6.2 of the report.
2. Nomenclature, page XXVI - Tritium contains three nucleons vice neutrons.
3. Section 2.2, pages 2.3 and 2.4 - The discussion about drinking the processed water should be deleted. The doses given in Table 2.3 for drinking the processed water may be confusing to the public.
4. Sections 2.2.1, 2.2.2 and 2.2.3, pages 2.5, 2.6, 2.7 and 2.9 - These sections include good discussions about the characteristics, interactions, and environmental concentrations of the radionuclides to be released. If additional radionuclides are added to the inventory list, as a result of the information provided in GPU Nuclear letters 4410-87-L-0018 and 4410-87-L-0023, the PEIS should be amended to include similar discussions about the additional radionuclides.
5. Section 2.2.3.2, page 2.9 - The typical dietary intake of strontium should include a time period, e.g., 1.9 milligrams/day vice 1.9 milligrams.
6. Section 2.2.3.3, page 2.9, first paragraph - Background levels of Sr-90 are "routinely" measured, rather than "rarely" measured.
7. Section 2.2.5.3, page 2.12, second paragraph - "Very low concentrations are also detrimental." should be, "Excessively low concentrations are also detrimental."
8. Section 3.1.1, page 3.3 - Should note that evaporator bottoms may be in the form of a dry powder, in which case solidification will not be required; dry powder disposal may be in drums.
9. Section 3.1.1.1, page 3.3 - Should indicate that the evaporator is modular vice transportable, i.e., the evaporator may not be transportable as a single unit. It may require several modules to be transported to the site for assembly.
10. Section 3.1.1.1, page 3.3, first paragraph - Should change the sixth sentence of this section to read, "Some form of moisture separator or vapor superheater would be provided to assure that liquid droplets and dissolved components are not discharged with the water vapor."
11. Section 3.1.1.1, page 3.3; Section 3.1.1.2, page 3.6 - Although the original GPU Nuclear proposal anticipated that exhaust from the evaporator would be routed to an existing atmospheric discharge point, this plan has been modified. It is anticipated that a separate exhaust stack (currently anticipated to be 100 feet high) will be installed with the evaporator.

12. Section 3.1.1.1, page 3.3 - Although the original GPU Nuclear proposal assumed a 3 gal/min flowrate for the evaporator, it should be noted that higher flow rates are acceptable if evaporator effluents comply with Technical Specifications Limits.
13. Section 3.1.1.1, page 3.6; Section 4.5, page 4.12 - Should indicate that the low level waste (LLW) may be shipped to any commercial LLW burial site and that the U.S. Ecology site near Richland, Washington, was specifically evaluated as it was judged to be the bounding case from a transportation accident standpoint.
14. Section 3.1.1.2, page 3.7, third paragraph - The annual dose values stated (e.g., "dose to the maximally exposed individual is estimated to be 0.9 mrem to the bone and 0.2 mrem to the total body") do not appear to be correct. This annual dose appears to result in a 50-year dose commitment higher than 3 mrem to the bone and 0.5 mrem to the total body.
15. Section 3.1.2.2, page 3.12, third paragraph - The person-rem to the bone (2 person-rem) is less than the person-rem to the total body (3 person-rem). However, the bone dose to the maximally exposed individual is higher than the total body dose. There appears to be an error in the person-rem numbers.
16. Section 3.2.1.2, page 3.16, first paragraph - Should include an assessment due to airborne dispersal of solids.
17. Section 3.2.1.3, pages 3.16 and 3.17 - Should also include a dose from the groundwater pathway.
18. Section 3.5.1, page 3.31 - EPA drinking water standards for Sr-90 and Cs-137 are not mentioned.
19. Figure 4.4, page 4.5 - Population distribution is not the same as used by TMI. The population distribution used by TMI is provided in Attachment 2.
20. Section 4.1.3, page 4.9 - Normal groundwater elevation is closer to 282' MSL average.
21. Section 4.2.2., page 4.11 - Other endangered species occur in the TMI vicinity. For example, ospreys have been observed around the York Haven impound pond by TMI personnel. Paragraph should indicate that other endangered species may visit the site.
22. Section 5.2, page 5.4 - References to BEIR I and BEIR III are confusing. The section should clarify the intended use of each report.
23. Appendix B, page B.1 and Section 3.1.1.3, page 3.9 - Chester County and Baltimore City have water intakes in the Susquehanna River. Although they generally do not use Susquehanna River water, that potential exists. Therefore, TMI uses 6 million persons for the total population, including these large metropolitan areas. Since the possibility exists that these two water sources could be in use for short periods of time, accident calculations should include these populations.

24. Section 3.4.2.2, page 3.29 - What river discharge flowrate is used? Since river flowrate is an important factor in population dose, a short term release could be deliberately conducted during high river flow to reduce population dose. The option should discuss the potential reduction in population dose commitment with proper timing of the release (i.e., at spring flood).
25. Appendix B, page B.1 and Section 5.1, page 5.1 - Doses to the population should include the entire fed population in the 50 mile radius. Lancaster County has one of the highest foodstuff value productions by county in the entire country. Therefore, export of these foodstuffs should be considered. It is inconsistent to incorporate the questionable bay shellfish pathway and not the fed population within 50 miles. While the resident population is about 2.2 million people, the fed population can approach 15 million people.
26. Appendix B, page B.1 and Section 5.1, page 5.1 - TMI used 6 million persons as the drinking water population. Some discussion of the size of the potentially exposed population in Chester County and Baltimore City would be appropriate.
27. Appendix B, page B.1 - The river flowrate given here should be included in the discussions in the body of the report.
28. Appendix B, page B.1 - A near field dilution factor of 0.2 is appropriate for the fish pathway, based on Regulatory Guide 1.109 and TMI/Sutron dye studies of the Susquehanna River. Why has a flow of 3150 cfs been used for the fish pathway only?
29. Appendix B, page B.2 - Inclusion of the Bay shellfish pathway is inappropriate. There is clearly a dramatic dilution in the bay. The behavior of Susquehanna River water in the bay is not modeled. Surely channel flow of the lighter freshwater, dilution in the bay, flushing by tidal action, and input from other rivers (Chester, Patapsco, Potomac, Choptank) make the calculation grossly inaccurate. Further, many shellfish grounds are in tributary waters which may not be impacted by Susquehanna River water. Finally, long hold up times in the impounds of the numerous dams downstream contribute to natural removal processes.
30. Appendix B, page B.3 - Input ingestion parameters for the concerned population do not appear to be consistent with Regulatory Guide 1.109.
31. Appendix B, page B.3 - Annual 50-mile radius production figures are not consistent with those used at TMI; i.e., approximately 2×10^8 kg/yr meat, 2×10^9 kg/yr vegetables and 2×10^9 l/yr milk.
32. Appendix B, page B.3 - The pathway fractions are inconsistent with those used at TMI. Based on the annual land use census, most milk and beef animals are on pasture for about 7 months of the year.

33. General - The total amount of processed water at TMI-2 is increasing at a faster rate than originally predicted. This increase is due to the use of demineralized water for various plant processes that were not originally anticipated (e.g., demineralized water has been borated to required RCS concentration for use in the coagulant addition system). GPU Nuclear now anticipates that approximately 2,300,000 gallons of water will require evaporation. However, since this additional water was uncontaminated prior to use at TMI-2, the amount of radionuclides available for release from TMI-2 remains constant.

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POPULATION AFFECTED BY GASEOUS PATHWAY PEOPLE

DIRECTION	S	(DOWN WIND)			
	3.000E+01	3.600E+01	4.340E+02	6.680E+02	4.640E+02
	8.307E+03	7.401E+04	2.836E+04	8.542E+04	1.034E+05
DIRECTION	SSW	(DOWN WIND)			
	1.500E+01	4.100E+01	3.040E+02	4.160E+02	3.870E+02
	3.975E+03	1.910E+04	4.263E+04	2.490E+04	4.179E+04
DIRECTION	SW	(DOWN WIND)			
	1.500E+01	1.130E+02	3.200E+02	4.480E+02	5.160E+02
	3.416E+03	1.219E+04	1.320E+04	2.249E+04	2.250E+04
DIRECTION	WSW	(DOWN WIND)			
	1.400E+01	2.370E+02	3.200E+02	4.480E+02	5.760E+02
	3.467E+03	1.284E+04	1.301E+04	1.877E+04	2.188E+04
DIRECTION	W	(DOWN WIND)			
	1.800E+01	3.330E+02	3.200E+02	4.480E+02	5.820E+02
	5.453E+03	1.362E+04	4.265E+04	3.250E+04	3.789E+04
DIRECTION	WNW	(DOWN WIND)			
	1.500E+01	2.510E+02	3.060E+02	4.640E+02	5.990E+02
	8.121E+03	3.209E+04	1.464E+04	1.166E+04	8.473E+03
DIRECTION	NW	(DOWN WIND)			
	1.300E+01	1.210E+02	1.690E+02	2.590E+02	1.814E+03
	2.986E+04	6.215E+04	8.230E+03	1.018E+04	1.066E+04
DIRECTION	NNW	(DOWN WIND)			
	9.000E+00	5.700E+01	1.275E+03	8.290E+02	1.093E+03
	1.662E+04	1.281E+04	1.803E+04	1.597E+04	1.750E+04
DIRECTION	N	(DOWN WIND)			
	7.000E+00	8.100E+01	3.104E+03	5.654E+03	1.779E+03
	1.326E+04	1.274E+04	2.319E+04	4.198E+04	3.055E+04
DIRECTION	NNE	(DOWN WIND)			
	3.000E+01	1.330E+02	2.720E+02	3.240E+02	3.980E+02
	9.264E+03	1.484E+04	2.457E+04	1.972E+04	4.388E+04
DIRECTION	NE	(DOWN WIND)			
	2.800E+01	1.330E+02	2.210E+02	3.100E+02	3.980E+02
	4.202E+03	2.229E+04	2.553E+04	1.967E+04	7.477E+04
DIRECTION	ENE	(DOWN WIND)			
	3.700E+01	1.330E+02	2.210E+02	3.100E+02	3.880E+02
	2.326E+03	1.630E+04	2.776E+04	3.575E+04	1.585E+05
DIRECTION	E	(DOWN WIND)			
	4.000E+01	1.170E+02	2.210E+02	4.250E+02	5.010E+02
	1.068E+04	3.074E+04	3.684E+04	3.432E+04	4.745E+04
DIRECTION	ESE	(DOWN WIND)			
	3.700E+01	1.040E+02	1.600E+02	2.900E+02	4.960E+02
	3.693E+03	3.787E+04	9.597E+04	4.031E+04	5.821E+04
DIRECTION	SE	(DOWN WIND)			
	3.400E+01	1.030E+02	1.600E+02	2.200E+02	2.790E+02
	2.444E+03	2.158E+04	2.215E+04	3.273E+04	3.435E+04
DIRECTION	SSE	(DOWN WIND)			
	2.500E+01	8.600E+01	1.650E+02	3.110E+02	2.280E+02
	3.678E+03	1.862E+04	2.228E+04	2.986E+04	5.910E+04
DISTANCES (METERS) FOR ABOVE TABLE					
	6.100E+02	2.413E+03	4.022E+03	5.631E+03	7.240E+03
	1.207E+04	2.414E+04	4.023E+04	5.632E+04	7.241E+04