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Mr. Paul Leech
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

Dear Mr. Leech:

Thank you for the opportunity you afforded myself and the staff of the Maryland Power Plant Siting Program to discuss the technical issues involved in scoping the Programmatic Environmental Impact Statement (EIS) for the cleanup at Three Mile Island. As promised during our meeting on January 22, I am writing this letter to document some of the points we raised. The Environmental Health Administration, including the Division of Radiation Control, has reviewed these comments and concurred with our views.

It is our view that Maryland's legitimate concerns center around the approximately one million curies of bioaccumulatable radionuclides which have escaped the fuel rods and contaminated the water now in the primary coolant loop of unit 2, the floor of the unit 2 containment building, and various tanks and pipes in the auxiliary building and fuel handling building. Should any significant quantity of this water escape or be released to the Susquehanna River without sufficient decontamination, serious contamination of several public drinking water supply systems and valuable fishery resources would result. Even minor leakage could seriously damage the viability of the commercial fishery in Maryland due to the public fear it would create and the resultant impact on the public acceptance of the Maryland catch at market.

The issues most discussed by the news media, the tritium in the plant's water inventory and the krypton in the containment building atmosphere, do not appear to pose any significant risk to Maryland. Should the ~3,500 curies of tritium in the unit 2 water inventory eventually be released to the Susquehanna River in a controlled manner, our estimate of the resultant radiation dose is on the order of 0.01 mrem to a Maryland citizen who is intimately dependent upon the Susquehanna River and the upper Chesapeake Bay for his drinking water and food. This dose estimate is insensitive to the length of time taken to release the tritium, assuming the release is slow enough that average statistics for river flow and public water consumption are applicable. Similarly, the 44,000

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curies of Kr-85 in the containment building atmosphere could not be expected to deliver doses greater than 0.1 mrem to the skin and 0.001 mrem to the whole body at the nearest Maryland border if vented in a controlled manner during periods of average atmospheric dispersion. Since Pennsylvania's citizens are much closer to the plant than are Maryland's, we feel that it would be inappropriate for Maryland to impose its will on them regarding the risk trade-offs involved in the selection of a containment atmosphere cleanup method. Only if the method preferred by Pennsylvania would cause a delay that would substantially increase the risk of releasing contaminated water would we feel justified in contending that approach.

Because radioactive contamination now makes normal maintenance impossible for some systems and difficult for many others in unit 2, we are concerned that the cleanup process be completed in an expeditious manner so that further malfunction(s) will not create additional situations where events, rather than plans, control actions at the power plant. We are also concerned that further human error may result in leakage or accidental release of contaminated water to the Susquehanna River. The ad hoc nature of the additional tankage, piping and procedures now necessary for handling the contaminated water outside the containment building appears to provide significantly enhanced opportunity for such error. Thorough planning of the cleanup operation is necessary to minimize the potential for errors to occur and, should they occur, to minimize their potential to seriously affect the environment. We were pleased to learn that the NRC has already established a team of engineers from the Argonne National Laboratory, the Idaho Falls National Reactor Test Site and the Pacific Northwest Laboratory to aid in developing the objective overview needed for such planning. Such a team of experts with previous decontamination experience should be capable of significantly accelerating the development of an adequate Programmatic EIS.

We are disturbed by the slow pace at which the NRC is presenting approaching the necessary planning. Ten months after the accident, the scoping process is underway to determine what needs to be considered. The December 1980 estimated completion date for the Programmatic EIS means the decision date on how the cleanup should be conducted would occur about two years after the accident. Should public hearings be required, the decision would probably not be forthcoming until at least three years after the accident.

After review of your draft outline, we offer the following comments and topics suggested for inclusion in the Programmatic Environmental Impact Statement:

1. Coherence of the overall plan for decontamination and defueling.

It is important that enough foresight be exercised in the cleanup process so as to minimize the necessity for releasing radioactivity to the environment. Sufficient flexibility (spare tankage, resin, radwaste storage area, etc.) should be maintained to accommodate system upsets. Processes which proceed in parallel should be coordinated sufficiently to assure timely interface, and to assure that upset in one does not remove the flexibility to accommodate upset in another without additional

environmental releases. Planning should be sufficient to assure that intermediate waste forms will be compatible with successive processing steps, and that radwaste storage areas will incorporate safeguards sufficient for the radwaste forms actually generated. Recycling of cleaned water for further use in the decontamination process should be considered in order to keep discharges as low as reasonably achievable.

2. Institutional barriers.

a) Financial failure of Metropolitan Edison Company.

It should be explicitly recognized that the cleanup process could be interrupted or halted prior to completion due to financial insufficiency of Metropolitan Edison Company. The necessary decontamination processes should be reviewed to determine what steps, if any, cause temporary decrease in the security of the radioactive materials on site. The risks of unanticipated interruption during such steps should be explicitly considered during the selection of alternative processes, the design of the necessary facilities, and the final decision to begin a new step of the process. Options for guaranteeing or significantly improving assurance of sufficient financing should be investigated.

b) Unavailability of off-site waste disposal alternatives.

At present there are no facilities available for accepting commercially generated high-level radioactive waste or commercial spent fuel. The governors of states where facilities presently available for disposal of commercial low level wastes are located have recently demonstrated the ability and prepossession to refuse wastes generated in the cleanup of Three Mile Island. Although Hanford is currently available, we are not aware of any reason to feel confident that low level wastes will not be stranded at Three Mile Island, and we would expect that high level wastes could not be removed under present federal policies. The Programmatic EIS should explore such barriers to expeditions removal of wastes from the island, with particular emphasis on options and assurances which could be provided by federal action. One specific option we wish to see addressed is the acceptance by DOE of all wastes as they become ready for shipment. We see no technical reason why the facilities utilized by DOE for nuclear wastes generated by our military nuclear programs could not be used to alleviate any need for indefinite storage of wastes on Three Mile Island.

c) Blockage of radwaste transport from the site.

The possibility of interstate carriers of the radwaste material being stopped by state and local regulations should be considered as it would affect storage requirements on site. The availability of a sufficient number of containers and vehicles which comply with all necessary transportation codes should be considered.

3. Ecological impact of proposed discharges.

The area for consideration of impacts resulting from chemical and radiological discharges should include the upper Chesapeake Bay. Should discharges from the plant remain at or below the levels which existed during normal operation, we do not expect any detectable level of impact in Maryland waters, based upon our own measurements to date. We can detect radiological influence of Peach Bottom Atomic Generating Station effluents in a pattern which illustrates the effective transport phenomena down to the mouth of the Sassafrass River. This environmental data, combined with the effluent release data for Peach Bottom, provides an opportunity to quantitatively predict an upper bound for the effect on the same area due to releases of similar radionuclides from Three Mile Island. We would be pleased to share our data and thoughts with you in developing this part of the EIS.

4. Specific radiological effluent release criteria for cleanup process.

Specific limitations on total radionuclide release resulting from the cleanup process should be considered in the EIS and established by the Commission. Conceptually, this procedure does not differ from the adoption of the "as low as practicable" release criteria contained in Appendix I to 10CFR50 for operating reactors. However, the cleanup process differs substantially from normal reactor operation, particularly in that the flexibility contained in the Appendix I criteria to assure reliable electrical power generation is not pertinent in this case. The adoption of specific criteria by the Commission would enhance public confidence that the allowable further impacts were bounded, and it would provide the release values for which the EIS would project impact. It would clearly establish the boundaries within which Metropolitan Edison Company could adjust its waste handling activities to minimize cost.

5. Socioeconomic impacts of effluent releases.

The public fear of radioactivity must be weighed in the consideration of impacts due to planned effluents. Of specific interest to Maryland is the public acceptance at the market of those fish and shellfish harvested from the Chesapeake Bay. It is quite difficult to explain to people that very low but measurable levels of man-made radioactivity in fish are not worthy of consideration in selecting their food. The idea that an increment of radioactivity due to Three Mile Island can be found in certain fish is certain to lead to some public aversion. We have already been asked by one individual "When will it be safe to eat the crabs in the Upper Bay, again?" despite the fact that nobody has reported any Three Mile Island produced radionuclides in any Chesapeake Bay biota. Selection of release limits during cleanup which do not materially exceed the release values of normal operation should not contribute detectable


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increments of radioactivity to Chesapeake Bay. Establishing specific release limits and calculating the effects of releases at those levels will do much to convince the public that the Bay's resources remain acceptable. Determining the acceptability of each individual proposed discharge while placing no bounds on the total would likely have the opposite effect. Unfortunately the news media can be expected to constantly bring each release decision to the public's attention, but there would be no way for a member of the public to feel assured that the cumulative effect of all the announced releases remained below levels which had been found acceptable after open review by the scientific community.

We also wish to comment on those NRC procedures which will interface with the Programmatic EIS. Normally, any modification of this magnitude in the equipment and procedures for radwaste processing and storage is handled by the Commission through amendment of the plant's Operating License, which includes the Technical Specifications for safe operation and monitoring. Under this procedure, specific consideration is given to items, such as effluent release procedures and effluent pathway monitoring requirements, which are not normally treated in an environmental impact statement. We feel that Maryland has a legitimate interest in some of these areas, since they are the means by which the Metropolitan Edison Company will be directed to limit the risk of inadvertent and/or undetected release of radioactivity. Of special interest to us is the assurance that storm drains are monitored at a level of effort commensurate with the amounts and forms of radioactivity to be handled within their particular drainage areas. Data from other power plants, including some we have taken at Calvert Cliffs, illustrates that radioactivity may be found in storm drains where it is not expected and sometimes cannot be readily explained. Although this phenomenon is apparently of little significance at a normally operating reactor, it serves to illustrate an increased need for surveillance at Three Mile Island, where many water inventories, building surfaces and piping systems have severe levels of contamination. We are therefore keenly interested in participating in whatever procedures will be used to address these issues.

In the months to come, we hope to continue our technical contacts with you and your staff. A free exchange of information and ideas during the formulation of the cleanup strategy is the best approach for rapidly arriving at a mutually acceptable solution. Again, we wish to thank you for your cooperation.

Sincerely,


Steven M. Long, Ph.D.
Director, Power Plant Siting Program

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