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March 4, 1980

Honorable John F. Ahearne  
Chairman  
United States Nuclear Regulatory Commission  
Washington, D. C. 20555

Reference: Cleanup of Three Mile Island - Unit 2

Dear Mr. Ahearne:

We were pleased to see the Commission's recent decision to re-view the status of TMI-2 in the meeting of February 15, 1980, with Mr. Stello and by the establishment of the group under Mr. Haller to look into the current situation. My staff has met with Mr. Haller's group and we attempted to fully support their efforts.

In this letter we will summarize the major near-term considera-tions we believe are involved in this matter.

The overriding consideration is, of course, safety. There are two general aspects that we would like to comment on, first:

Minimizing actual radiation dose from the accident released radioactivity during the cleanup--that is, complying with the As Low As Reasonably Achievable (ALARA) principle.

Some alternative actions under consideration and the full imple-mentation of some Commission actions ~~already taken~~ may not be consis-tent with the ALARA principle. They might result in a significant increase in the actual, or potential, radiation dose--a dose which can be avoided. That could place the Commission in the position of requiring--and us in the position of proceeding--on a basis contrary to that principle to which we both subscribe.

All studies show that the assured minimum total dose to people from the krypton gas now in the containment is achieved by purging containment to the atmosphere at a controlled rate as proposed by Metropolitan Edison Company--before initial entry, if possible. Such purging would meet all applicable regulations. The total activity released during this one time operation is also less than is released annually from the average, normally operating nuclear power plant and is less than results from operation of a single large coal plant.

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March 4, 1980

The requirement to solidify all TMI demineralizer resins before shipment, substantially increases the total dose to personnel and the transportation related risks involved in disposing of those items. Specifically, because the decision to require solidification of resins was made after the EPICOR II design was finalized the design does not allow for "in-place" solidification of the resins. Solidification of existing resins, and those used for processing in the near term, requires transferring the radioactive resins from their liners by converting them to a slurry and repackaging the resins in order to solidify them. This involves significant additional radiation dose to workers and increased possibility of on-site leaks or spills. It also approximately doubles the volume of radioactive material to be shipped and the number of shipments. The resins can be shipped safely in the present form--without solidification--using existing approved containers. We are proceeding to develop equipment and procedures to solidify future EPICOR-II resins. Some technical difficulties and uncertainties exist. There is a possibility that we may not be able to develop a satisfactory method. All options may incur unwarranted increases in handling dose, possibility of cask leaks, or inappropriate transportation requirements.

We will in the near future be seeking approval to install and operate the Submerged Demineralizer System for the cleanup of the 700,000 gallons of highly contaminated water in the Containment Building. Just as was the case with EPICOR II, the crucial objective will be to expeditiously immobilize those accident-released fission products that are now in a fluid state by virtue of being in solution in the Containment Building and Reactor Coolant System waters. We are proceeding on the basis of established NRC criteria and Regulatory Guides. Any future imposition of currently unidentified requirements could impact the ability to proceed with timely capture of a significant inventory of fission products.

The difficulty of cleaning up radioactivity deposited on surfaces and thus the radiation dose involved to the workers is likely to increase with time. Therefore, unnecessary delay in itself can cause increased dose. This provides additional incentive to proceed with each phase of the cleanup as early as practicable.

March 4, 1980

POOR  
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The second safety consideration is:

Keeping the core protected so that the large quantities of radioactivity still contained therein are not released to the primary coolant system and the containment.

If released, they would greatly increase the radiation dose to workers involved in cleanup and recovery of the plant and potentially result in additional off-site releases. There are two principal mechanisms which could result in further core damage and release of additional radioactivity. While neither is likely in an absolute sense, they are real, not quantifiable, will persist until the core is removed, and increase with time. They are:

Recriticality of the core due to loss of effective poison. While the poison concentration is closely monitored and maintained, this can only be done on the basis of coolant samples drawn from the loop. With the very low flow rates in the plant and the disturbed geometry of the core, there is less than the normal assurance that that actual poison concentration throughout the core will continue to be adequately represented by the sample.

Uncovering of the core due to loss of water. Although the plant is at low temperature and pressure, the primary coolant chemistry is relatively uncontrolled and the exterior surfaces of the primary coolant system have been, and continue to be, exposed to an unfavorable environment for which they were not designed. A non-isolable primary coolant leak below the core could pose some increment of risk for further core damage and would definitely increase the volume of radioactive water to be cleaned up even though the plant systems and procedures do provide methods for cooling of the core under this adverse condition.

Minimizing the risk of further core damage and the associated release of additional radioactivity requires expeditious cleanup. The schedule is controlled by containment purging, containment entry, cleanup and removal of the water in the reactor building sump, decontamination, and establishment of a normal atmosphere and environment within the Containment Building.

We fully recognize the public sensitivity to cleanup operations at Three Mile Island. However, the true public interest is in safety. There is apparently a misconception in many places which equates safety with zero discharges from the site. This is not a correct view.

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March 4, 1980

Some low-level releases are necessary and completely acceptable. We believe it is incumbent on the Commission and us to make this clear and, more importantly, to base decisions on it. We also believe that protracted delays unnecessarily increase the public anxiety and imply a far greater significance than is warranted to the controlled releases that are necessary in conjunction with proceeding with cleanup.

A basic decision is needed from the Commission to establish criteria for releases from the TMI site during cleanup. In the absence of firm criteria there is not an adequate basis for us to plan or proceed nor to guide the Commission staff in their work. We believe existing Commission criteria and regulations, including proper recognition and application of the ALARA principle, are fully adequate to protect the public and our employees. We see no valid basis for imposing additional more stringent criteria to releases and shipments from TMI than are applied elsewhere--particularly if they increase actual dose and risk to employees. We do recognize that the unprecedented task that lies ahead will require our continuing development of technical skills and management controls.

Under our license we are responsible for conducting our operations so as to assure the health and safety of the public and our employees. For the reasons outlined above, it is our firm conviction that this responsibility can only be met by proceeding with deliberate speed with the cleanup. The problem will not go away. We cannot rest until all radioactive materials are safely removed from the site and placed in a more suitable repository.

We request the Commission's consideration of the above in its review of these matters and specifically that prompt action be taken to:

Reaffirm existing Commission criteria as the bases for releases from the site.

Approve our request to proceed with controlled purging of the containment and permit initial air lock entry immediately.

Reconsider Commission requirement to solidify before shipping the existing EPICOR II resins and those which will become available during an interim period. We are preparing a letter which will provide additional details on this matter.

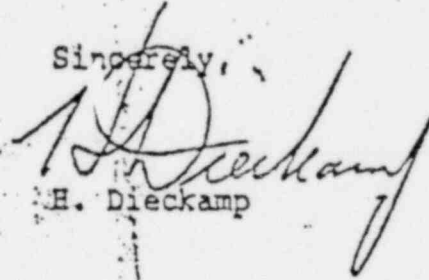
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March 4, 1980

Establish guidelines needed to permit prompt Commission action on future requests. This should include establishment of practical levels of approval authority.

We believe it also would be appropriate and helpful to provide for regular joint management review of TMI cleanup activities important to public safety. Since our individual responsibilities cannot be fulfilled without substantial interaction between our respective organizations, I think we can both direct our activities more effectively if a senior representative of NRC management and a senior member of GPU management meet periodically and review and evaluate the status of cleanup activities. This could contribute substantially to timely resolution of issues which may otherwise cause delays in proceeding with the cleanup. I also suggest that a representative from the Commonwealth of Pennsylvania may wish to participate in such meetings in order to facilitate their review of site activities. I would be happy to pursue this suggestion with whatever member of the NRC staff you suggest would be the appropriate representative for such an activity.

Sincerely,



H. Dieckamp

lda

cc: Commissioner V. Gilinsky  
Commissioner R. T. Kennedy  
Commissioner J. M. Hendrie  
Commissioner P. A. Bradford

W. J. Dircks  
Acting Executive Director for Operations, USNRC

H. R. Denton, Director  
Office of Nuclear Reactor Regulation

V. Stello, Jr., Director  
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Pennsylvania Department of Environmental Resources

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Lt. Gov. of Pennsylvania

FROM PDR:

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& EXTRA COPY

