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OCT 16 1980

Docket No. 50-320

Mr. Donald E. Hossler  
 501 Vine Street  
 Middletown, Pennsylvania 17057

Dear Mr. Hossler:

I am writing in response to your letter of June 10, 1980 to Chairman Ahearne concerning the issue of decontamination of the TMI-2 reactor building atmosphere. Your letter references the transcript of the Commission meeting of June 5, 1980 on staff presentation of its Final Environmental Assessment for Decontamination of the Three Mile Island Unit 2 Reactor Building Atmosphere (NUREG-0662) and includes general and specific comments on the meeting transcript. It should be noted that the purge of the TMI-2 reactor building commenced on June 28, 1980 and was essentially completed on July 11, 1980. Your comments are responded to in the attached enclosure.

Sincerely,

*[Signature]*  
 Original Signed By  
 E. G. Case

Harold R. Denton, Director  
 Office of Nuclear Reactor Regulation

Enclosures:

1. Response to Comments
2. Commission Order for Temporary Modification of License 6/12/80
3. Commission Memorandum and Order of 6/12/80
4. NUREG-0662, Volumes 1 & 2

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 pp 5719

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SURNAME	SNewberry:prf	RWeller	BJsnyder	<i>W.C. Hanauer</i>	EGCase	HRDenton
DATE	9/30/80			<i>10/8/80</i>		

RESPONSE TO COMMENTS OF  
MR. DONALD E. HOSSLER

Comment:

First, I get the impression that the Commissioners seem to think the people fear 10-15 curie accidental releases to venting. I feel you have been misinformed. We would have all gladly put up with 10 or 12 accidental puffs of 15-20 curies occasionally while selective absorption was put in place last year. We all know K-85 is constantly escaping. An alternative would have been a good faith move by the NRC to 1) reduce stress tremendously, 2) be available for further gaseous releases, 3) be available to be moved to the next accident and finally because you will limit the amount of K-85 by 1983.

Response:

During the first few months following the accident, the attention of the licensee and the NRC was focused on the problems at hand which were assuring adequate cooling of the damaged reactor core and dealing with the large quantities of radioactive waste water. Correspondence and discussion with many local citizens indicates that the public was not willing to "put up with 10 or 12 accidental puffs of 15-20 curies occasionally". For example, on February 11, 1980, a small, but uncontrolled, leak developed from the TMI-2 makeup system. The makeup system maintains water inventory in the reactor primary coolant system and controls reactor system pressure. Up to 1000 gallons of the primary coolant water leaked from the system to the TMI-2 auxiliary building sump and a small amount of krypton-85 (less than 0.3 curies) was released during the incident. The release was well below the regulatory limits of 10 CFR 20 and the TMI-2 Environmental Technical Specifications, however, it proved to be very disturbing to many citizens in the plant vicinity.

Metropolitan Edison Company submitted to NRC a "Safety Analysis and Environmental Report" (November 13, 1979) in which they evaluated alternative methods for the processing of the krypton gases, such as purging and cryogenic processing, and selective absorption. NRC also evaluated alternative methods for processing the krypton gas to determine what effect decontamination would have on workers, on the public health and safety, and on the environment. Based on its evaluation, NRC issued an Environmental Assessment (NUREG-0662 and two Addenda) for public comment on March 26, 1980, and received approximately 800 comments. These comments were considered in the staff's preparation of the "Final Environmental Assessment for Decontamination of the Three Mile Island Unit 2 Reactor Building Atmosphere," NUREG-0662, Vols 1 and 2, copies of which are enclosed for your information.

From this process emerged the following NRC staff conclusions:

--The potential physical health impact on the public of using any of the proposed strategies for removing the krypton-85 was negligible.

--The potential psychological impact was likely to grow the longer it took to reach a decision, get started, and complete the process.

--The purging method was the quickest and the safest for the workers on Three Mile Island to accomplish.

--Overall, no significant environmental impact would result from use of any of the alternatives discussed in the Assessment.

On June 12, 1980, the Commission issued a Memorandum and Order and an Order for Temporary Modification of License authorizing controlled purging of the krypton-85 from the reactor building atmosphere. Copies of both Commission issuances are also enclosed. Actual purging operations began on June 28, 1980 and were completed on July 11, 1980. The doses resulting from the purge were well within those predicted in Section 7.1 of Volume 1 of NRC's Final Environmental Assessment.

Availability of krypton removal systems at other sites in the future is currently being considered. NUREG-0660, NRC Action Plan Developed as a Result of TMI-2 Accident, was developed to provide a comprehensive plan for the actions now judged necessary by the Nuclear Regulatory Commission to correct or improve the regulation and operation of nuclear facilities based on the experience from the accident at TMI-2 and the official studies and investigations of the accident. The TMI-2 accident did show that a significant quantity of radioactive noble gas may be released to the containment atmosphere. NUREG-0660 identifies a program to determine the applicability and desirability of the use of available technology to minimize the release of radioactive noble gases during and following various postulated accident conditions. The program will include an assessment of the various potential pathways for releases of noble gases, as well as considerations of accelerated rates for treating large gas volumes, such as those existing in large containment structures.

Concerning your reference to the limitation of Kr-85 releases by 1983, the regulation you refer to is set forth in 40 CFR Part 190, Environmental Radiation Protection Standards for Nuclear Power Operations, paragraph 190.10. It specifies, in part, that the total quantity of radioactive materials entering the general environment from the entire uranium fuel cycle, per gigawatt-year of electrical energy produced by the fuel cycle, shall contain less than 50,000 curies of Kr-85, effective January 1, 1983. However, the standard applies only to releases for normal operation and does not include accident generated Kr-85.

Comment:

Page 41 - Commissioner Kennedy appears stunned that those who wrote comments opposed to purging did not always recommend an alternative. I would like to remind the Commission that it took 7 months from the time of the accident to decide to do an EIS and nearly 4 months to relay via the media that Kr-85

would have to be "disposed" of. The Commission's responsibility is to be decisive and develop and implement alternatives that are in the public's interest. I also remind the Commission that without intervenor funding it is difficult for "working people" to address an E.A. or E.I.S. in a purely technical matter.

Response:

As stated above, during the first few months following the accident the attention of the licensee and the NRC was focused on the problems of adequate core cooling and radioactive water management. In its Statement of Policy and Notice of Intent to prepare a Programmatic Environmental Impact Statement of November 21, 1979, the Commission stated that the staff would prepare a programmatic environmental impact statement on the decontamination and disposal of radioactive wastes resulting from the Three Mile Island, Unit 2, accident. The statement emphasizes the Commission's intention to (1) coordinate its action on this matter with the President's Council on Environmental Quality, and (2) provide the opportunity for public comments. The programmatic environmental impact statement (PEIS) was issued July 1980 and focuses on the environmental issues and alternative methods associated with the performance of these cleanup activities and will incorporate the comments received from the public.

Concerning funding for intervenors generally in the NRC licensing proceedings, the necessary statutory authorization does not currently exist to provide such funds.

Comment:

Page 42, line 21 and 22 - It seems your instruction should come from a variety of sources rather than just PUMA. The addendum for comment on psychological aspects of venting was only citations. Did you really expect me to research all of them? Funding for an independent analysis would have helped immensely and may still help.

Response:

"PUMA" should read "Human" from the Human Design Group, the Staff's consulting psychologists. In using the term "Instruction" in line 21 Commissioner Hendrie was referring to the Commission's role in instructing the Staff on the nature of the NRC's responsibility in dealing with the psychological and mental aspects of TMI related issues. Addendum 1 of the NUREG-0662 was intended only as a preliminary indication of the scope of various studies related to the psychological stress issue. The Staff's full analysis of this issue is reported in the Final Environmental Assessment.

Comment:

Page 43, line 6-9 - False, appropriate developments of alternatives in April 1979 would have helped immensely.

Response:

The Staff's analysis of psychological stress examined only the alternative available in the Spring of 1980 as outlined in NUREG-0662. There was no retrospective examination of alternatives which might have been available previously.

Comment:

Page 43, line 20-23 - I understand certain elements of the study which this gentlemen assisted were withheld from the final report of the President's Commission.

Response:

The differences between the final draft of the "Report of the Task Force on Behavioral Effects" dated October 15, 1979 and the document released to the public on October 31, 1979 are minor and mostly stylistic. The missions in Chapter X, which deals in part with the distinctions between short-term and long-term mental health and behavioral effects, are a set of specific recommendations for further research. Omission of these recommendations does not change the conclusions reached in the remainder of the report.

Comment:

Page 45, line 2, 3, 4 - This gentleman is not independent as stated on Page 44 line 20. Have any of the three mentioned reviewed recent data or done recent clinical interviews?

Response:

By independent the Staff meant that Dr. Quarantelli was not affiliated with the NRC, Met Ed/GPU or any other parties with continuing direct involvement in TMI. The Staff is unaware of a recent involvement in TMI research on the parts of Drs. Dohrenwend, Wahrheit, and Quarantelli.

Comment:

Page 46, line 15-20 - Acute stressing is chronic in this area because the institution of nuclear energy are feared and viewed as reacting more to monetary than human consideration. The stress will not end with disposal of K-85. The stress will linger because of NRC indecisiveness in 1979 and Met Ed's lost credibility.

Response:

The NRC is aware of the existence of psychological stress in the vicinity of TMI and appreciates that questions of credibility and perceived indecisiveness are contributors to stress. These considerations in fact supported the decision for venting krypton-85 quickly to proceed with decontamination of Unit 2.

Comment:

Page 48, line 3-6 - Better communication does not come about by discontinuing public meetings, which were open to everyone as held by DER. I can guarantee that 90% of the meetings held since the famous Liberty Firehall Meeting were not advertised to the general public. No attempt was made by your agency to outreach to those who have been most vocal, instead you merely say, "We are available." NRC has not reduced stress but rather selectively shut-out masses of concerned and knowledgeable citizens who can assist in your final determinations and expose areas of concern that you are not aware of 140 miles distant.

Response:

The NRC has pursued various avenues of communication with the public concerning TMI issues. The Liberty Firehall meeting of March 19, 1980 was held to describe and discuss the results of the Environmental Assessment on TMI-2 atmospheric decontamination (NUREG-0662). In addition, written public comments on the Draft Environmental Assessment were solicited. Approximately 800 written comments were received and reviewed. Also, the Staff has held four public scoping meetings concerning the Programmatic Environmental Impact Statement for Decontamination of Three Mile Island, Unit 2, and is soliciting written public comments on the draft statement. Many public meetings have been held already and are scheduled in the near future to obtain comments from the public on the draft PEIS. Commissioners have met three times with public groups on TMI concerns generally. An NRC office was established in Middletown to make the NRC staff available to local citizens on a continual basis, and NRC Staff members are available to meet with citizen groups and other organizations upon request. Staff members have participated in a large number of these meetings in the past months.

Comment:

Page 50, line 3-4 - Were first and second series of interviews by the Western Psychiatric Study reviewed in detail?

Response:

Dr. Streufert's remarks did not reflect the findings of the second data set (March 80) of the Western Psychiatric study headed by Dr. Bromet. At the time of the hearing the later information was not available and will not be available to compare to the preliminary analysis (Dec. 79 - Jan. 80) until early Fall 1980.

Comment:

Page 51, line 5-8 - Perhaps the control group is equally anxious (a high level) about nuclear energy in their backyard. Therefore, our exceeding them by a "low amount" may be quite high.

Response:

Beaver Valley nuclear power plant was a control site to rule out the possibility that differences in mental health between respondents in the two areas could be attributed to living near a nuclear facility per se. Nevertheless, Dr. Bromet's initial impression (pg. 29) is that the average (symptom mean) score of each of the subscales falls in the range considered normal, with the Beaver County mothers being closer to the norm. Thus, those living by the nuclear plant at Beaver Valley do not appear to be under any unusual stress.

Comment:

Page 51, line 10-11 - The threat level will remain after Kr-85 "disposal."

Response:

It was anticipated that at least some individuals in the population surrounding TMI would feel threatened and thereby experience some amount of stress during the decontamination period. However, the potential psychological impact was likely to grow the longer it took to reach a decision, get started, and complete the process.

Comment:

Page 51, line 18-19 - "After TMI was already over with." This accident is not over. Is this "independent" man telling us about his bias to nuclear energy?

Response:

Dr. Streufert was referring to the initial emergency period during March and April. His statement should not be construed to mean that events during that period do not have continuing ramifications.

Comment:

Page 53, line 25 and Page 54, line 1-3 - The "symptomatology" will remain through the cleanup. Without clinical interviews how can one conclude "they are functioning normally."

Response:

The psychological measurements made by a number of researchers, including the Behavioral Effects Task Force of the President's Commission on TMI, Dr. Evelyn Bromet, and Dr. Peter Houts indicated that the psychological profile of the TMI population is little different from the population as a whole.

Comment:

Page 56, line 15-19 - What has the Commission done to reduce stress for the past 15 months?

Response:

During the past 15 months the NRC has attempted to communicate to the public each step proposed or approved in insuring protection of public health and safety. Some of the efforts made to communicate were mentioned above in our response to your comments on "page 48, line 3-6".

Comment:

Page 57, line 1-4 - Selective absorption disposal could remain and be monitored in the decommissioned Unit 2 reactor.

Response:

Onsite Long-Term Storage of Kr-85 is discussed in section 6.8 of NUREG-0662 Vol. 1, enclosed. It was concluded that storage or burial of the Kr-85 gas was not the best alternative, due to the potential for subsequent uncontrolled release to the environment.

With regard to decommissioning Three Mile Island Unit 2, the licensee has not yet submitted to the NRC a proposal for overall plant recovery, or decommissioning although the licensee is conducting feasibility studies. It is not possible at this time to determine when such proposals for recovery or decommissioning may be submitted or how much time will be needed for the required reviews and approvals. Whether decommissioned or recovered, Unit 2 must be decontaminated.

Comment:

Page 57, line 19-25 - I know people who were not that concerned but in spite of the UCS report are in stressful times. You must remember that the utility has a long list of problematic mistakes and extremely low credibility which is connected to human psyche and extremely difficult to regain.

Response:

We share your concerns that TMI is a stressor to many people in the vicinity and that low credibility of any organization with responsibility toward TMI will contribute to higher stress levels. These are reasons why NRC has attempted to improve communications and its availability to the public in the TMI area.



Comment:

Page 58, line 7-10 - Will "disposal" of Kr-85 make the plant stable?

Response:

Your question refers to Dr. Baums remark that prior to the purging of the Kr-85, the plant was "unstable". Taken in context, it appears that Dr. Baum is referring to the uncertainty associated with the selection of a reactor building atmosphere decontamination alternative and the possibility for accidental leakage until the choice is made. The answer to your question therefore is, yes.

Comment:

Other comments - By sampling out to 15-40 miles you dilute the serious concerns within 5 miles of the plant. Also with 1700 people working at TMI and living in the area, neighbors and economics tend to keep people suppressing true feelings which will be detrimental to them, personally, in months ahead.

Response:

The major TMI studies treating attitudes and/or stress have either focused on the close in population or have been designed to account for distance as a determinant of attitudes or stress. It is difficult to anticipate the effect of a large TMI labor force on the nature and degree of psychological stress. Your position that, "neighbors and economics tend to keep people suppressing true feelings which will be detrimental to them personally, in the months ahead" may have some validity. On the other hand, interaction with those working on the TMI decontamination may have a beneficial effect on individual's perceptions of TMI.

Comment:

Is the Human Design Group backed by EPRI money or other vested interests of nuclear energy? The informal interviews surely needed contacts, who were the contacts?

Response:

The Human Design Group is not backed by EPRI money or other vested interests of nuclear energy. The information interviews referred to on page 55, line 15, were residents of Middletown and Elizabethtown interviewed in their homes.

Comment:

The utility will never regain its credibility and fears of the people will not be decreased by "disposal" of Kr-85. It is very important that the Commission pay more attention to TMI than just setting up a special office. You need to become proactive rather than reactive. You need to plan and utilize methods to educate the public about what the cleanup will involve.

Response:

We believe the evidence we have examined supports the proposition that elimination of the krypton-85 problem will result in lower stress than otherwise would exist. This does not mean that stress will be eliminated or that new events won't increase stress.

In its Statement of Policy and Notice of Intent to prepare a Programmatic Environmental Impact Statement of November 21, 1979, the Commission stated that the staff would prepare a programmatic environmental impact statement on the decontamination and disposal of radioactive wastes resulting from the Three Mile Island, Unit 2, accident. The statement emphasizes the Commission's intention to (1) coordinate its actions on this matter with the President's Council on Environmental Quality, and (2) provide the opportunity for public comments. Public meetings were held in the Harrisburg-Middletown area to discuss the scope of the impact statement. Meetings and activities similar to those conducted prior to the reactor building purge are being held to solicit comments on the PEIS and will likely be held for key recovery activities at the site.

Comment:

When is the Commission going to know whether Unit 2 will be decommissioned? Once again here is a need for a decision. A prompt review and decision is needed. Surely, just the costs of decontamination alone make it wise to decommission Unit 2.

Response:

As stated previously, the licensee has not yet submitted to the NRC a proposal for overall plant recovery or decommissioning. A proposal to restore or decommission the facility would probably not occur until a detailed inspection and engineering assessment is made of the nuclear steam supply system and more information is known about its condition. Cost estimates to date show that the decontamination costs would be the majority of the total recovery cost so that the decision to decommission may not be made on a cost basis.