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21 April 1980

Dr. Richard H. Vollmer, Director
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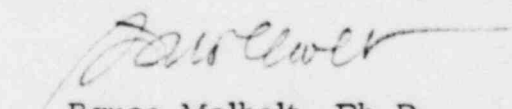
RE: Comment to NRC Environmental Assessment for
Venting of TMI-2 Containment Atmosphere,
Addendum 2

Dear Dr. Volmer,

Enclosed you will please find two copies of our
comment to the Second Addendum of the NRC Environmental
Assessment for the Decontamination of the Three Mile Island
Unit 2 Reactor Building Atmosphere.

If you have any questions concerning this comment,
please do not hesitate to contact me.

Yours sincerely,


Bruce Molholt, Ph.D.
for the TMI Legal Fund

Enclosures

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Comment to NRC ENVIRONMENTAL ASSESSMENT FOR VENTING OF TMI-2
ATMOSPHERE, Addendum 2

TMI Legal Fund

Introduction

The Environmental Assessment for decontamination of the TMI-2 containment building atmosphere was addended twice. In this comment we address the second NRC Addendum. The first NRC Addendum addressed the fifteen psychological studies of stress induced in the TMI area by the accident and radionuclide leaks in its aftermath. The second NRC Addendum addressed shortening the proposed venting period from 60 to 5 days.

Shortening the Proposed Venting to Five Days

The rationale behind shortening the proposed venting from 60 to 5 days is plain enough. The question comes from the increased health risks which would be suffered by the surrounding communities as a result of higher concentrations of krypton-85 gas in their atmosphere. In this section we address those same health effects, psychological stress, carcinogenesis and mutagenesis, which were addressed in our original commentary, supplementing the previously submitted information.

Increased venting rates according to the amended proposal will be now 5,000 to 50,000 cubic feet per minute as compared to 100 to 1,000 cubic feet per minute of the original proposal.

This fifty-fold increase in purge rate could be accomplished by extra fans outside the hydrogen purge system. Several aspects of this increased purge rate are not clear from the Addendum 2 description and potentially increase the health dangers to the public:

1) How adequately can contaminants of the 2 million feet of air be removed by filtration through HEPA and charcoal filters at 5,000 to 50,000 cubic feet per minute? Under normal conditions, filtration efficiency is inversely proportional to the rate of gas passage over the filter. As we suspect contamination of the atmosphere by strontium-90, cesium-137 and plutonium-239, reduced filtration efficiencies pose serious health threats to the public.

2) A fifty-fold increase in krypton-85 ventilation into the outside air will render it 500 pCi/cc at the land site boundary rather than 10^{-5} μ Ci/cc of the original Assessment. The chances of significant contamination of low-lying areas surrounding TMI increase proportionally. Small changes in meteorologic conditions become fifty times more significant as do lag times between monitoring krypton-85 concentrations and alterations in venting rates necessary to meet (unstated) maximal concentration levels.

3) Although the reduced venting times have a certain popular appeal in that populations who wish to evacuate during the venting period need to remain away from home and job for a shorter period, it is not clear that people

who move from, for example, within 1 mile on the west (where fear of venting is the strongest) to within 10 miles on the east, are in actuality reducing their krypton-85 exposure due to prevailing westerly winds. It is not clear that families would know where to go during evacuation. A family moving from 1 mile away to 15 miles away might even be in more actual danger due to the vagaries of wind during the 5-day proposed venting period. Evacuation may be little more than a hollow gesture.

Any self-selective evacuation procedure which would be facilitated by the 5-day venting is inherently undemocratic. It favors those who can afford to evacuate, possibly causing more stress to those who must remain behind when they can see their neighbors leaving.

Psychological Stress and Reduced Venting Period

Our comments here supplement those of the previously filed comments to the Environmental Assessment body (1). They address facts arising from two of the fifteen studies of psychological stress which have been conducted since the accident and which are relevant to the proposed 5-day krypton-85 venting:

- 1) the NRC-funded study conducted by the Mountain West Research group(2), and
- 2) the Pennsylvania State Health Department study directed by Dr. Peter S. Houts of the Hershey Medical Center (3).

We believe that both of these studies indicate that, in addition to the severe psychological trauma which endures from the accident and its aftermath, that venting of krypton-85 into the atmosphere of this same population in 5 days will significantly exacerbate this stress.

Table III-21 of the Mountain West Research study (2) shows that, months after the TMI accident, over 40 percent of the people polled were still concerned about emissions from the stricken reactor. Fifty-six percent of the population within a 5-mile radius to the west were concerned about further TMI emissions as compared to 19 percent who weren't concerned. The fear factor was still prominent for populations between 5 and 10 miles to the west, 47 percent being very concerned, only 13 percent being unconcerned. Not until more than 25 miles from the reactor (in all directions) was the unconcerned population greater than the very concerned.

The State Health Department survey was similarly conducted by telephone and involved two waves of interviews four months and ten months after the accident. By far the most affected group lived within 5 miles of TMI. Among these 37,000 people, 3,800 (13 percent) had been transformed into "antinuclear activists," which statistic Pennsylvania Secretary of Health, Dr. H. Arnold Muller called "very large" and "very significant" (3). The report further revealed that, as of January, 60 percent did not approve of reactivating the TMI plant and that 54 percent would evacuate immediately in the event of any imminent nuclear disaster at the reactor site.

We suggest that these long-lasting, profound changes in psychological stress and antinuclear activism presage definite exacerbation of severe psychological stress and potential civil disobedience in the population surrounding TMI should the proposed venting of krypton-85 be attempted.

In summary, as all tests, including the Kemeny Commission's

own findings, have indicated severe psychological stress in the community surrounding TMI as a result of the accident which would be only increased by venting the krypton-85, and that the gas ought not to be vented into the atmosphere of these same afflicted peoples.

Conclusion

In conclusion, we find the proposal to reduce venting time for the removal of krypton-85 gas from the TMI-2 containment building atmosphere to present the public with no lessened degree of overall psychological stress and a worse adverse health potential than the original venting proposal. If venting is to be completed within five days, the average krypton-85 per day levels will exceed 11,000 curies. We find the proposal of the Environmental Assessment, Addendum 2, ineffective for the purposes for which it was designed.

Two additional portions of the second Addendum deserve comment. In describing the health effects which might come from elevating the stack another 140 feet, because the present stack at 160 feet in a valley does not afford much opportunity for proper dilution, the Assessment Addendum dismissed effectiveness even though two- to four-fold increase dilution would be achieved. As this would cause two- to four-fold fewer adverse health effects, we do not feel the advantages inherent in elevated stack height should be taken so lightly.

Secondly, it is proposed in the Addendum that the venting of 57,000 curies be 2/3ds of that allowable this year. This proposal fails to recognize the 20,000,000 curies released 13 months ago and the major releases that could occur after the present year during the future phases of the clean-up operation. This new attempt to

segment releases of radiation re-emphasizes the need for a comprehensive Environmental Impact Statement.

References

1. TMI Legal Fund (1980) Comments to the Environmental Assessment of Decontamination of the Three Mile Island Unit 2 Containment Building Atmosphere.
2. Mountain West Research, Inc. (1979) Three Mile Island Telephone Survey: Preliminary Report on Procedures and Findings (NUREG/CR-1093).
3. Franklin, B.A. (1980) Long distress found over atom accident, New York Times, April 18, 1980, p. A18 (see attachment).

April 18, 1980

LONG DISTRESS FOUND OVER ATOM ACCIDENT

Persistence of Anxiety Surprises
Expert in Study of Residents
Near Three Mile Island

By BENA FRANKLIN
Special to The New York Times

HARRISBURG, Pa., April 17 — The State Health Department today released the results of a psychological study disclosing what its author called a "surprising" persistence of anxiety among a large part of the population near the disabled Three Mile Island nuclear reactor.

"What began as a brief crisis has become a continuous and, for some, a chronically disturbing situation," the 55-page report said.

The study said that the health effects of this "distress" included increases of 113 percent in the number of persons using sleeping pills and 88 percent in those using tranquilizers. Also, 14 percent used more alcohol and 32 percent smoked more cigarettes, it said.

The study director, Peter S. Houts, a behavioral scientist at the nearby Hershey Medical Center of Pennsylvania State University, told a news conference that another finding of the survey's telephone interviews was that nearly 13 percent of the 37,000 people living within a five-mile radius of Three Mile Island had become anti-nuclear activists.

The State Secretary of Health, Dr. H. Arnold Muller, said that this kind of "emotional involvement" reported in the survey dropped to 3 percent among people 15 miles from the reactor and to less than 1 percent beyond 25 miles. He called the 13 percent figure in the group closest to the plant "very large" and "very significant."

Majority Oppose Reactivation

In the five-mile radius of what Dr. Muller called "this radioactive citadel," the report said that, based on interviews conducted in January, 60 percent did not approve of reactivating the plant and 54 percent said they would "evacuate immediately" in another nuclear crisis.

The survey, financed in part by a \$52,000 grant from the electric utility industry, involved two waves of telephoned interviews, the first last July and a second in January. The Three Mile Island accident and the weeks of tension that followed it began on March 28, 1979.

"I was very surprised to see that the distress of these people had lasted into July," Mr. Houts said today. "In January, I was even more surprised."

Twenty percent of the respondents who live within 10 miles of the plant reported in January that the accident had "disrupted their lives during the previous nine months." The figure was 10 percent for those living within 15 miles. Based on these percentages, the survey suggested that as many as 40,000 people had experienced some form of stress reaction.

"The distress, as we define it, has persisted nine months, out to a distance of 15 miles," Mr. Houts said.

'Psychosomatic Effects'

Among the 1,000 persons questioned in the latest survey last January, the report said that, when asked about "physical symptoms of stress," nearly half said they had experienced one or more of what Mr. Houts today called "psychosomatic effects" — headache, for example, or diarrhea, loss of appetite, sweating or rash.

"These are not at all symptoms that would cause them to be referred for psychiatric care," he said.

Both the President's commission on the Three Mile Island accident and a similar panel appointed by Gov. Dick Thornburgh concluded months ago that health effects related to radiation were expected to be barely measurable but that mental health effects were likely to be the lasting public impact here.

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