

Docket 50-320

Docket No. 50-320

AUG 22 1980

The Honorable John Heinz  
United States Senate  
Washington, D.C. 20510

Dear Senator Heinz:

This information is a response to your request of May 19, 1980, which forwards a letter, dated April 25, 1980, from your constituents Mr. and Mrs. Charles W. Emerick, Sr. In that letter Mr. and Mrs. Emerick express concerns relating to krypton-85 releases into the atmosphere around the Three Mile Island Nuclear Power Plant.

In addition to responding to these concerns here, I have enclosed three recently prepared documents which address virtually all of the concerns raised by your constituents. "Answers to Questions about Removing Krypton from the Three Mile Island, Unit 2 Reactor Building," NUREG-0673 was completed by the NRC staff in early May 1980. Also enclosed is a copy of the "Final Environmental Assessment for Decontamination of the Three Mile Island Unit 2 Reactor Building Atmosphere," NUREG-0662, Volumes 1 and 2, prepared by the NRC staff. Volume 1 contains the NRC staff's recommendations, including an assessment of alternatives to the Commission, and a discussion of the negligible health impacts associated with purging. Volume 2 contains the substantive public comments received by the NRC staff following distribution of Draft NUREG-0662 in March 1980. The Commission approved purging the reactor building atmosphere to the environment on June 12, 1980. A copy of the Commission's Memorandum and Order setting out their determination of this matter is enclosed. The purge commenced on June 28, 1980, and was concluded on July 11, 1980, when levels of Kr-85 in the reactor building were reduced to approximately  $2.0 \times 10^{-5}$  uCi/cc.

In response to Mr. and Mrs. Emerick's questions regarding thyroid studies in the TMI area, the following is offered. In the Commonwealth of Pennsylvania, thyroid examinations for newborns were initiated to identify thyroid disorders which, if uncorrected, could lead to mental retardation. According to Dr. Evelyn Bodin, Pennsylvania State Health Department pediatrician, the program was initiated in 1978 following a national recommendation by pediatricians and a group representing retarded citizens. Dr. Bodin pointed out that only about 10-15% of observed thyroid abnormalities are believed to be a result of a genetic defects. In the cited case regarding the twins (boys), the fact that one had an abnormal thyroid while the other didn't also indicates the abnormality was not inherited, but more likely was induced in utero. The cause of the observed effect is simply not known. However, it is unlikely that it would have been caused by radioiodine from the TMI accident, since both twins' thyroids would have accumulated essentially the same

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radiation dose from iodine transport across the placenta. Further studies of exposures to human thyroids indicate that much higher doses (on the order of 100,000 million) would be required to induce measurable increases in thyroid abnormalities.

With regard to the conclusion that the infant death rate around TMI has not increased since the TMI-2 accident, the NRC staff has also evaluated fetal mortality rate (i.e. deaths/deliveries) data from Harrisburg hospitals for the period January 1978 through December 1979. These data were supplied by the Pediatrics Division at Harrisburg Hospital. The NRC staff concludes that there is no statistically significant difference in these rates between the 15 months prior to the TMI-2 accident and the 9 months following the accident. Nor was there a statistically significant difference between rates in 1978 and 1979. Additional investigation by others, including Pennsylvania State officials and the NRC staff, of apparent increases in infant mortality (e.g. as claimed by Dr. Sternglass) showed the apparent increase was due to a recording error in data reported by the National Center for Health Statistics.

Sincerely,

*(Signed)* T.A. Rehm

William J. Dircks, Acting  
Executive Director for Operations

Enclosures:

1. NUREG-0662, Volumes 1 & 2, May 1980
2. NUREG-0673
3. Commission Memorandum and Order of June 12, 1980, Authorizing Controlled Purging of the TMI-2 Reactor Building Atmosphere

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*enclosed is a copy of*

*set by out their determination of this matter*

*Commission out of place*

In response to Mr. and Mrs. Emerick's questions regarding thyroid studies in the TMI area, the following is offered. In the Commonwealth of Pennsylvania, thyroid examinations for newborns were initiated to identify thyroid disorders which, if uncorrected, could lead to mental retardation. According to Dr. Evelyn Bodin, Pennsylvania State Health Department pediatrician, the program was initiated in 1978 following a national recommendation by pediatricians and a group representing retarded citizens. Dr. Bodin pointed out that only about 10-15% of observed thyroid abnormalities are believed to be a result of genetic defects. In the cited case regarding the twins (boys), the fact that one had an abnormal thyroid while the other didn't also indicates the abnormality was not inherited, but was induced in utero. The cause of the observed effect is simply not known. However, it is unlikely that it would have been caused by radioiodine from the TMI accident, since both twins' thyroids would have accumulated essentially the

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With regard to the conclusion that the infant death rate around TMI has not increased since the TMI-2 accident, the NRC staff has also evaluated fetal mortality rate (i.e. deaths/deliveries) data from Harrisburg hospitals for the period January 1978 through December 1979. These data were supplied by the Pediatrics Division at Harrisburg Hospital. The NRC staff concludes that there is no statistically significant difference in these rates between the 15 months prior to the TMI-2 accident and the 9 months following the accident. Nor was there a statistically significant difference between rates in 1978 and 1979. Additional investigation by others of apparent increases in infant mortality (e.g. as claimed by Dr. Sternglass) showed the apparent increase was due to a recording error in data reported by the National Center for Health Statistics. Dr. R. L. Gotchy of the NRC staff contacted the Commonwealth Health Statistics office of the Department of Health regarding infant and fetal mortality rates for the period 1968 to 1980 in the Commonwealth (including Dauphin County and the Harrisburg area). When received, the data will be carefully reviewed, and if a significant finding is made, your office will be immediately informed.

*It is unclear whether the apparent increase in infant mortality was due to a recording error*

*What does this mean*

Sincerely,

William J. Dircks, Acting  
Executive Director for Operations

Enclosures:

- 1. NUREG-0662, Volumes 1 and 2, May 1980
- 2. NUREG-0673
- 3. Commission Memorandum and Order of June 12, 1980, Authorizing Controlled Purging of the TMI-2 Reactor Building Atmosphere

*including Pennsylvania state officials and the NRC staff,*

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\*NOTE: SEE PREVIOUS YELLOW FOR CONCURRENCE

7/ /80

OFFICE	TMI PO	DIR PO	OELD	DIR/NRR	DIR/NRR	EDO
SURNAME	*WTravers/hmt	BJSnyder		EGCase	HRDenton	WJDircks
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NUREG-0662, Volume 1, also contains detailed discussions of alternatives to purging and the negligible health impacts associated with purging. I would note here, however, that purging 57,000 Curies of krypton-85 would not raise normal background levels in the TMI area, since the krypton would disperse throughout the earth's atmosphere and would not be independently detectable.

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