

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD



In the Matter of
METROPOLITAN EDISON COMPANY, ET AL.
(Three Mile Island Nuclear Station,
Unit 1)

}
} Docket No. 50-289
}

NRC STAFF PARTIAL RESPONSE TO
PANE INTERROGATORIES ON
PSYCHOLOGICAL STRESS

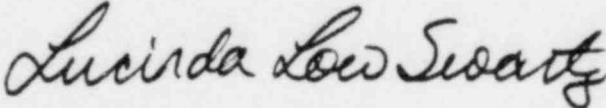
Pursuant to 10 C.F.R. § 2.720 and 10 C.F.R. § 2.744, the Staff has responded to six interrogatories submitted by People Against Nuclear Energy (PANE). As noted in an April 15, 1980 letter to counsel for PANE, the Staff was unable to answer the remainder of PANE's interrogatories at this time due to the uncertainty of the issue.

Each interrogatory is restated and a response provided. Where appropriate, the NRC Staff has relied upon that portion of the Commission's Order of August 9, 1979 (Slip Op. at 11) which allows as an adequate response to a discovery request a statement that information is available in the Local Public Document Rooms and guidance as to where the information can be found. An affidavit identifying the individual who prepared the responses and verifying them is attached.

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Although copies of certain documents are being sent to PANE and to the Licensing Board, they are too voluminous to be sent to all the parties. These documents will be placed in the local public document rooms in Harrisburg and York, Pennsylvania and in the Public Document Room in Washington, D.C.

Respectfully submitted,

A handwritten signature in cursive script that reads "Lucinda Low Swartz". The signature is written in dark ink and is positioned above the typed name and title.

Lucinda Low Swartz
Counsel for NRC Staff

Dated at Bethesda, Maryland
this 30th day of July, 1980

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NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
METROPOLITAN EDISON COMPANY, et.al.) Docket No. 50-289
(Three Mile Island, Unit 1))

AFFIDAVIT OF DONALD P. CLEARY

I, Donald P. Cleary, being duly sworn, do depose and state:

1. I am employed by the Siting Analysis Branch, Division of Engineering, Office of Nuclear Reactor Regulation of the United States Nuclear Regulatory Commission.
2. The answers to PANE Interrogatories 5, 7, 11, 12, 13, and 14 were prepared by me. I certify that they are true and correct to the best of my knowledge.

Donald P. Cleary
Donald P. Cleary

Subscribed and sworn to before
me this 25th day of July, 1980.

Elizabeth Ann Tipton
Notary Public

My Commission Expires: July 1, 1982

RESPONSE TO INTERROGATORIES

Interrogatory No. 5

Please identify all persons with whom the Staff has consulted or expects to consult concerning each of PANE's Contentions 1 and 2 and who has knowledge of facts relating to either of those contentions.

- a. For each person who has been consulted, state when he or she was consulted and summarize the substance of any facts or opinions communicated by such person to the Staff concerning the subject matter of PANE Contentions 1 and 2.
- b. Please identify all documents or studies referred to by persons identified in response to this interrogatory.

Response

The staff's efforts relative to psychological distress in the vicinity of TMI have been focused on the effects of the accident at TMI-2 and the aftermath, including decontamination of TMI-2. The issue of TMI-1 restart has not been specifically addressed. Contractors engaged by NRC who are dealing with issues covered by PANE's Contentions 1 and 2, and the areas of their concern, are:

Dr. James A. Chalmers, Vice President
Mountain West Research, Inc.
1414 West Broadway, Suite 229
Tempe, Arizona 85282

Studying the broad range of socioeconomic effects of the accident at TMI-2 and the aftermath. Mountain West Research Inc. responses to PANE's interrogatories are included as Attachment 1.

Dr. Hays B. Gamble, Associate Director
Institute for Research on Land and Water Resources
The Pennsylvania State University
University Park, Pennsylvania 16802
Studying changes in property values in the vicinity of TMI.

Dr. Andrew Baum
Human Design Group
18308 Dutchess Drive
Onley, Maryland 20832

Providing an interpretive review of the literature on psychological stress and studies of the psychological effects of the accident at TMI (NUREG/CR-1586) as input to the environmental assessment on atmospheric decontamination (NUREG-0662) and the programmatic environmental impact statement on decontamination of TMI-2. NUREG/CR-1586 will be supplied after it has been printed. NUREG-0662 was supplied to PANE previously.

Dr. Andrew Baum, Assistant Professor
Department of Medical Psychology
The Uniformed Service University of the Health Sciences
U. S. Department of Defense
4301 Jones Bridge Road
Bethesda, Maryland 20014
Monitoring changes in stress levels during venting of krypton-85
in the immediate vicinity of TMI.

Interrogatory No. 7

Does the Staff deny that the accident at Three Mile Island Unit 2 caused any psychological or mental distress among people living near the reactor, and in particular among those living within five miles of the reactor? What is the basis for this answer?

Response

The Staff does not deny that the accident at Three Mile Island Unit 2 caused psychological or mental distress among people living near the reactor, and in particular among those living within five miles of the reactor. The Staff is aware of several studies which have documented the existence of such distress. These are reported on in the following documents:

Report of the President's Commission on the Accident at Three Mile Island, 1979.

Behavioral Effects, Task Force Report to the President's Commission on the Accident at Three Mile Island, 1979.

Three Mile Island Telephone Survey: Preliminary Report on Procedures and Findings, NUREG/CR-1093, 1979. Attachment 2.

The Social and Economic Effects of the Accident at Three Mile Island, NUREG/CR-1215, 1979, Attachment 3.

Three Mile Island Socio-Economic Impact Study, Commonwealth of Pennsylvania, 1979.

Report of the Governor's Commission on Three Mile Island, 1980.

Health-Related Behavioral Impact of the Three Mile Island Nuclear Incident Part I, Report Submitted to the TMI Advisory Panel on Health Research Studies of the Pennsylvania Department of Health, 1980. Attachment 1, Appendix B.

Preliminary Report on the Mental Health of Three Mile Island Residents, Evelyn Bromet, Ph.D., Principal Investigator, University of Pittsburgh, School of Medicine, Department of Psychiatry, May 1980. Available from the Principal Investigator.

Interrogatory No. 11

Please identify all physicians, social workers, therapists, nurses, and other health professionals, both in the vicinity of TMI and elsewhere, whom the Staff has contacted concerning the issue of possible psychological or mental stress caused by the accident at TMI Unit 2 or that might be caused by reopening TMI Unit 1.

- a. Please state when these contacts were made and summarize the substance of any facts or opinions communicated by these persons to the Staff.
- b. Please identify and provide copies of all documents referred to by these persons or provided to the Staff by these persons.

Response

Regarding the accident at TMI Unit 2 and its aftermath health professionals contacted by the Staff were:

Drs. Joyce Kales and Enos D. Martin, Assistant and Associate Professors of Psychiatry, respectively, at the Milton S. Hershey Medical Center. The Staff had discussions with Drs. Kales and Martin upon two occasions. The first conversation is summarized in Attachment 4. The second conversation was held in early October 1979 at the Hershey Medical Center and covered much the same material reported in Attachment 4 but at somewhat greater depth. The Staff was provided with no documents by Drs. Kales and Martin.

Dr. Peter S. Houts, Division of Behavioral Sciences, Milton S. Hershey Medical Center. The Staff had had several telephone conversations and two in-person meetings with Dr. Houts. These conversations were to coordinate NRC's telephone survey research (NUREG/CR-1093) with his survey research and to follow the progress of his research.

Drs. Andrew Baum, Robert Gatchel, and Seigfried Steufert associated with the Human Design Group. Drs. Baum and Gatchel are on the faculty of the Department of Medical Psychology, Uniformed Services University of the Health Sciences, and Dr. Steufert is on the faculty of the Milton S. Hershey Medical Center. The Human Design Group has been under contract with NRC since April 4, 1980 to assist in assessing the psychological stress aspects of decontamination of Unit 2. Findings on krypton-85 removal are summarized in NUREG-0662, Final Environmental Assessment for Decontamination of the Three Mile Island Unit 2 Reactor Building Atmosphere and reported more fully in NUREG/CR-1586 which will be supplied as soon as it is available.

Additionally, Dr. Baum is the Principal Investigator in a study monitoring psychological stress levels in the vicinity of TMI during venting of krypton-85. Monitoring is being conducted under an Interagency Agreement with the U.S. Department of Defense, Uniformed Services University of the Health Sciences.

Dr. Bruce P. Dohrenwend, Department of Psychiatry, Columbia University. The Staff has had several telephone conversations with Dr. Dohrenwend concerning the Behavioral Effects Task Force Report and his assessment of possible psychological effects from atmospheric decontamination of TMI Unit 2 (Attachment 5).

Dr. George J. Warheit, Department of Psychiatry, University of Florida. The Staff has had several telephone conversations with Dr. Warheit concerning the Behavioral Effects, Task Force Report and his assessment of possible psychological effects from atmospheric decontamination of TMI Unit 2 (Attachment 6).

Dr. Victor X. Fongemie, Associate Commissioner of Planning and Evaluation and Janet Kelley, Director of Evaluation, Office of Mental Health, Department of Public Welfare, and, Marilyn King Goldhaber, Public Health Behavioral Research Associate, Bureau of Health Research, Department of Health. The Staff has communicated with those three Pennsylvania State Officials upon several occasions regarding TMI Mental Health related research of which they were cognizant.

Interrogatory No. 12

Please identify and provide copies of all documents know to the Staff and sent to, received from, or otherwise relating to the following persons:

(Individuals listed in Response)

Response

This response is with regard to documents directly related to TMI only.

Dr. James Titchener University of Cincinnati	None
Dr. B. L. Quarantelli Ohio State University	Attachment 7
Dr. Cal Fredericks National Institute of Mental Health	None
Dr. Robert Jay Lifton Yale University	None
Dr. Kai Ericson Yale University	None
Dr. Elelyn Bromet University of Pittsburg	Received report, see response to Interrogatory No. 7
Dr. Martin Smith Long Island University	None
Dr. Bruce P. Dohrenwend Columbia University	Attachment 5; See, also response to Interrogatory No. 11
Dr. Barbara Snell Dohrenwend Columbia University	No direct Staff contact. See Dr. Bruce P. Dohrenwend
Dr. Stanislav V. Kasl Yale University	None
Dr. George J. Warheit University of Florida	Attachment 6; See, also response to Interrogatory No. 11
Raymond L. Goldstein Columbia University	No direct Staff contact. See Dr. Bruce P. Dohrenwend

Interrogatory No. 13

Please identify and provide copies of all documents, prepared by or known to the Staff which evaluate, contain Staff's reaction to, or otherwise relate to or reflect the conclusion of the President's Commission on the Accident at Three Mile Island (the Kemeny Commission) that severe mental stress was the most serious health effect of the accident.

Response

The Staff is unaware of any Staff documents which evaluate, contain Staff's reaction to, or otherwise relate to or reflect the conclusion of the President's Commission on the Accident at Three Mile Island that severe mental stress was the most serious health effect of the accident. Mitchell Rogovin as Director of the NRC/TMI Special Inquiry Group did, however, on November 15, 1979, write a memorandum to the Commission in which he acknowledged to the President's Commission finding and expressed the need for actions to alleviate continuing mental stress (Attachment 8).

Interrogatory No. 14

Please identify all real estate agents, brokers, and others knowledgeable about real estate transactions and prices in the vicinity of TMI, and all members of the business community, local government leaders, local government employees (including anyone employed by or connected with the school systems), and community leaders whom the Staff has contacted or consulted concerning the issues raised by PANE's Contention 2.

- a. Please identify and provide copies of all documents recording, reflecting, or otherwise related to the contacts with persons identified in response to this interrogatory.

Response

The Staff has had contact with Dr. Hays B. Gamble and with individuals in the Governor's Office of Policy and Planning on matters related to issues raised by PANE's Contention 2. Dr. Gamble is an expert conducting research for the Staff on the real estate impacts of TMI (See response to Interrogatory No. 5); and, the Office of Policy and Planning coordinated development of the report Three Mile Island Socio-Economic Impact Study which treats issues raised by PANE's Contention 2. The Staff has had no direct contact with local business, government and community leaders specifically with regard to these issues.

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Washington, D.C. 20555

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*Secretary
U.S. Nuclear Regulatory Commission
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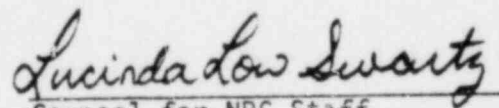
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