

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

DOCKETED
USNRC

In the Matter of)	
)	
METROPOLITAN EDISON COMPANY)	Docket No. 50-289 SP
)	(Restart-Remand on Management)
(Three Mile Island Nuclear)	
Station, Unit No. 1))	

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LICENSEE'S RESPONSE TO THREE MILE ISLAND
ALERT'S FIRST SET OF INTERROGATORIES AND
FIRST REQUEST FOR PRODUCTION

I. INTRODUCTION

On July 31, 1984, Intervenor Three Mile Island Alert (TMIA) filed its First Set of Interrogatories to GPU Nuclear Corporation and its First Request for Production. Shortly thereafter, Licensee informed TMIA that it intended to request a protective order with respect to a number of the discovery requests as exceeding the scope of the Restart proceeding. To facilitate discussion of Licensee's objections, Licensee provided TMIA with a draft of the protective order it intended to request. On August 13, 1984, Licensee and TMIA met to discuss Licensee's objections, but were unable to reconcile their positions as to scope. However, Licensee and TMIA did agree to several clarifications to the mutual benefit of both parties.^{1/}

^{1/} In fact, Licensee withdrew an intended scope objection to Interrogatory No. 9 in light of the agreed upon changes.

On August 15, 1984, Licensee filed a Motion for Protective Order, in which it objected to TMIA Document Request Nos. 1-6, and 9, and to TMIA Interrogatory Nos. 2-7, 14-22, 37-31, 34, 37-41, 48-51, and 58. Licensee moved that many of these requests be limited to documents or information relating to the generation and subsequent combustion of hydrogen, the pressure spike, and the initiation of containment spray, all of which occurred at TMI-2 at approximately 1:50 p.m. on March 28, 1979.

Licensee also requested an extension of time until September 4, 1984, in which to respond to TMIA's interrogatories. In order to respond to many of TMIA's interrogatories, Licensee had to canvass a large number of GPU and B&W employees. Although Licensee believes that it has no obligation to obtain information from former employees no longer under Licensee's control, Licensee included such former employees in its inquiry and made a good faith effort to ascertain their knowledge.

These inquiries entailed a considerable effort. It took Licensee about two weeks to digest TMIA's interrogatories and to prepare a thirteen-page questionnaire to be sent to present and former employees. Licensee also compiled a list of the names and addresses of individuals who might have pertinent information.^{2/} The list included over 400 individuals and also

^{2/} The list includes present and past GPU system and B&W employees whose name appeared in one or more of the following

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took over two weeks to prepare.

Licensee's document search and preparation of answers to interrogatories not dependent on the survey of employees proceeded concurrently with the preparation of the questionnaire. Six employees have worked exclusively on the discovery requests for the past month, and a number of attorneys and members of GPU management have devoted considerable portions of their time to the requests.

On August 27, 1984, the Licensing Board informed Licensee by telephone that Licensee's request for an extension of time would be granted. On August 29, 1984, TMIA notified Licensee that it was repudiating the clarifications to which TMIA and Licensee had agreed. On August 30, 1984, the Licensing Board

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categories:

1. Specifically named individuals in Intervenor Three Mile Island Alert's First Request for Production to General Public Utilities, request number 6;
2. Individuals who were issued TLDs by Three Mile Island on March 28 through 30, 1979, and were engineers or analysts or were in the Operations, Maintenance, Quality Control, Rad Waste/Rad Chem, Chemistry or Training department;
3. Personnel identified to the President's Commission as Principal People Sent to the Site March 28 through 30, 1979, and GPUSC, Mtn. Lakes technical support; and
4. B&W personnel listed in the NRC Special Inquiry Group Report at page 886 or identified in L. Roger's Statement dated June 12, 1979.

held a conference telephone call to discuss Licensee's motion for protective order, and the Board provided advance notification of its intended rulings.

This Response contains Licensee's answers to TMIA's discovery requests as modified by the changes to which Licensee and TMIA agreed and as limited by Licensee's previous objections and motion for protective order. Licensee is presently preparing a supplemental response necessitated by the Board's rulings on Licensee's motion for protective order. Licensee will file this supplemental response as soon as possible. With respect to TMIA's effort to reinstate contentions previously modified by mutual agreement, Licensee objects to those contentions as unreasonably burdensome and irrelevant to the extent they call for information different from the information called for in the modified contentions.

II. TMIA's Document Requests

With respect to the documents requested by TMIA, as limited by Licensee's motion for protective order, Licensee has made such documents^{3/} available for inspection and copying in a

^{3/} TMIA has agreed that Licensee need not provide copies of the following documents:

- 1) NUREG 0600
- 2) Report of the President's Commission on the Accident at Three Mile Island; and staff reports listed therein.
- 3) Reporting of Information Concerning the Accident at Three

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Discovery Room located at:

Room 418
Center City Holiday Inn
2350 2nd Street
Harrisburg, Pennsylvania

For access, contact John Wilson, Esq., at (201) 263-6136.

The following documents prepared by Shaw, Pittman, Potts & Trowbridge are attorney work product, are privileged, and will not be included in the Discovery Room.

Memorandum from Paul A. Kaplan to J. Patrick Hickey
re Dieckamp Mailgram of May 9, 1979 (April 22, 1981).

Memorandum from Paul A. Kaplan to J. Patrick Hickey
re Analysis of and Response to Udall Subcommittee Ma-
jority Staff Report, Section III-J ("Hydrogen Combustion") (April 22, 1981).

Briefing Memorandum prepared by J. Patrick Hickey for
Robert C. Arnold (May 1, 1981).

Draft Digest of Documents Pertaining to the Dieckamp
Mailgram (August 24, 1984).

Counsel for Licensee has knowledge of the factual basis on
which the privilege lies.

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Mile Island - Committee on Interior and Insular Affairs
(Udall).

4) NUREG 0760.

5) Three Mile Island, a Report to the Commissioner and the
Public (Rogovin).

6) Memorandum from Mitchell Rogovin et al. to Chairman Ahearne
(March 4, 1980) (Supplemental Rogovin).

7) Restart Proceeding Pleadings and Transcripts.

III. TMIA's Interrogatories

Interrogatory 1

Regarding any document responsive to Intervenor TMIA's First Request for Production of Documents of whose existence GPU is aware, or which GPU knew existed in the past, and which is not now within GPU's custody or control, state the following:

- (a) the current location of the document;
- (b) the custodian of the document;
- (c) the title and substance of the document;
- (d) the document request to which the document is responsive; and
- (e) if the document no longer exists, the last known location of the document and the circumstances under which the document ceased to exist.

Response (1)

Licensee is aware of no documents responsive to TMIA's First Request for Production of Documents, as limited by Licensee's Motion for Protective Order, that are not now within GPU's custody or control. This response will be supplemented to the extent required by the ASLB Order ruling on Licensee's Motion for Protective Order.

Interrogatory 2

Describe all lines and methods of communication and/or reporting between the NRC and GPU which existed on March 28, 1979. State the following for each such line or method of communication and/or reporting identified above:

- (a) the method or line of communication, whether by telephone, in person, by teletype or by some other method;
- (b) each person participating in each such method or line of communication;

- (c) the precise time each such method or line of communication was first utilized on March 28, 1979;
- (d) the precise length of time on March 28, 29, or 30, 1979 such method or line of communication was maintained;
- (e) each person, who although not participating, had the opportunity to overhear and/or learn of the information transmitted by means of such method or line of communication on March 28, 1979;
- (f) all persons named in Document Request number 6 who overheard, or saw, learned from any individual involved in the communication about, the communications, and the time, date and/or reason for that person being informed of such communications;
- (g) the person who on March 28, 1979, initiated, suggested or recommended setting up each new method or line of communication and/or reporting listed above; and
- (h) identify any documents which refer to, mention, memorialize or otherwise concern the availability or use any such method or line of communication on March 28, 1979.

Response (2)

(a) Lines and methods of communications between GPU and the NRC as they existed on March 28, 1979 included telephonic and in-person communications.

(b) With respect to specific communications that addressed hydrogen, the spike, or initiation of containment spray, Licensee is aware of only two communications that were reported as having been made with the NRC on March 28, 1979. Brian Mehler has stated that he discussed the spray pump actuation with an NRC inspector, but could not identify the individual. Joseph Chwastyk stated that about the time the spray pumps were shut off he communicated with Donald Neely, an NRC inspector.

(c), (d), (g) The initiation and maintenance of the methods or lines of communication between Licensee and the NRC are described in NUREG/CR-1250, "Three Mile Island: A Report to the Commissioners and to the Public," Vol II, Pt. 3, pp. 943-952 (Jan. 1980); "Staff Report to the President's Commission on the Accident at Three Mile Island, Report of the Office of Chief Counsel on the Nuclear Regulatory Commission," pp. 132-137 (Aug. 1979); NUREG-0600, "Investigation into the March 28, 1979 Three Mile Island Accident by Office of Inspection and Enforcement," pp. I-3-39 to I-3-43 (Aug. 1979); and Subcommittee on Nuclear Regulation, "Report to the United States Senate, Nuclear Accident and Recovery at Three Mile Island," pp. 118-120, 127-128, 130-132, 137-138, 147-151 (June 1980).

(e) Anybody in the control room at the time had the opportunity to overhear any communications between Chwastyk or Mehler and the NRC.

(f) Brian Mehler told the Senate Subcommittee on Nuclear Regulation about his communication in an interview on August 22, 1979. Mehler also told the NRC in a deposition on October 30, 1979. Joseph Chwastyk told the NRC about his communication in a deposition on October 30, 1979, and in an NRC interview on September 4, 1980.

(h) Specific communications referred to in the response 2(b) are discussed in:

Deposition of Joseph Chwastyk by NRC Special Inquiry Group (Oct. 30, 1979), at 18, 21-23.

Interview of Joseph Chwastyk by I&E
(Sept. 4, 1980), at 13-14, 104-112.

Interview of Brian A. Mehler by the Senate
Subcommittee on Nuclear Regulation
(Aug. 22, 1979) at 9-10.

Deposition of Brian A. Mehler by the NRC
Special Inquiry Group (Oct. 30, 1979)
at 7-10, 18-22, 25-26.

Deposition of James Higgins by the NRC Spe-
cial Inquiry Group (Sept. 9, 1979), at 6.

Deposition of Donald R. Neely by the NRC
Special Inquiry Group (Oct. 12, 1979),
at 16.

Interview of Donald Neely by NRC (Oct. 7,
1980) at 13.

NUREG-0760, "Investigation of Information
Flow During the Accident at Three Mile Is-
land" (Jan. 1981) at 24-25.

Subcommittee on Nuclear Regulation, "Report
to the United States Senate: Nuclear Acci-
dent Recovery at Three Mile Island" (June
1980) at 140.

Majority Staff of the House Committee on
Interior and Insular Affairs, 97th Cong.
1st Sess., "Reporting of Information Con-
cerning the Accident at Three Mile Island"
(March 1981) at 73.

NRC Office of Inspection and Enforcement,
Memorandum (May 18, 1979), reprinted in
Accident at The Three Mile Island Nuclear
Power Plant, Oversight Hearings before a
Task Force of the Subcommittee on Energy
and the Environment of the House Committee
on Interior and Insular Affairs, 96th
Cong., 1st Sess. 192 (1979).

Methods and lines of communications are discussed in the docu-
ments identified in response 2(c).

Interrogatory 3

Identify all persons assigned to the emergency organization or command team and all persons who participated in the think tank meetings in the shift supervisor's office from March 28 through March 30, 1979 at the TMI-2 site. Describe each such person's duties and responsibilities during this three-day period.

For each person identified above, state the exact time he was in Unit 2, his access to or location in the Control Room, and all activities or tasks he performed during this three-day period.

Response (3)

The emergency command team individuals assembled by G. P. Miller on March 28, 1979 and their responsibilities were:

<u>Individual</u>	<u>Responsibilities</u>
G. Miller	Emergency Director
M. Ross	Supervise TMI-2 operator actions
R. Dubiel	Supervise radiation protection activities
J. Logan	Assure procedures and plans were reviewed and followed
G. Kunder	Supervise technical support and communications
D. Shovlin	Supervise emergency maintenance
J. Seelinger	Supervise emergency control center in TMI-1
L. Rogers	B&W Employee - Technical assistance and liaison with B&W

The activities of these individuals are discussed in their prior testimony, interviews, and depositions, which Licensee has made available in the Discovery Room. Licensee is presently endeavoring to obtain further information from these individuals.

Interrogatory 4

Identify all lines or methods of communication and reporting between the NRC and B&W which existed on March 28. Identify the following concerning all such lines of communication and/or reporting identified above:

- (a) the method or line of communication, whether by telephone, in person, by teletype or by some other method;
- (b) the persons participating in each such method or line of communication or reporting, and the substance of his/her participation;
- (c) the persons who heard or saw any communications described above;
- (d) the precise time each such method or line of communication was first utilized on March 28, 1979, and the length of time on March 28, 29, or 30, 1979, it was maintained;
- (e) persons who overheard, or saw, or learned from any individual involved in the communications about, the communications described above, and the time, date, reason and method by which these persons were so informed;
- (f) persons who initiated, suggested, or recommended initiation of each new method or line of communication and/or reporting described above; and
- (g) all documents which refer to, mention, memorialize or otherwise concern the availability or use of any such method or line of communication and/or reporting described above.

Response (4)

The lines and methods of communications between the NRC and B&W as they existed on March 28, 1979 included telephonic communications and in-person communications. These lines and methods of communications generally continued through March 30, 1979. The lines and methods of communications are generally

described in Nuclear Regulatory Commission's Special Inquiry Group Report, Volume II, Part 3, Section B.

Licensee is unaware of any communication between the NRC and B&W on March 28, 1979 concerning the hydrogen burn, pressure spike or containment building spray actuation that occurred in the TMI-2 containment building at approximately 1:50 p.m. on March 28, 1979. See completed questionnaires addressed to B&W personnel, which are available in the Discovery Room.

Interrogatory 5

Identify all lines or methods of communication and/or reporting between GPU and the State of Pennsylvania, or any state agency or office, on March 28, 1979. For each such line of method of communication and/or reporting listed above, identify the following:

- (a) the method or line of communication, whether by telephone, in person, by teletype or by some other method;
- (b) all persons participating in each such method or line of communication or reporting, and the substance of his/her participation;
- (c) all persons who heard or saw any communications described above;
- (d) the precise time each such method or line of communication and/or reporting was first utilized on March 28, 1979, and the length of time on March 28, 29, or 30, 1979 each was maintained;
- (e) all persons who overheard, or saw, or learned from any individual involved in the communications about, the communications described above, and the time, date, reason and method by which these persons were so informed;
- (f) persons who initiated, suggested, or recommended initiation of each new method or line of communication and/or reporting described above; and

- (g) all documents which refer to, mention, memorialize or otherwise concern the availability or use of any such method or line of communication and/or reporting described above.

Response (5)

The lines and methods of communication between GPU and the State of Pennsylvania or any state agency or office as they existed on March 28, 1979 included telephone communications and in-person communications. These lines and methods of communications generally continued through March 30, 1979. The lines and methods of communications are generally described in President's Commission, Report of the Public's Right to Information Task Force; Nuclear Regulatory Commission's Special Inquiry Group Report, Volume II, Part 3, Section C and Appendices III.7 and III.8; NUREG-0760 at 39.

To the best of Licensee's knowledge, no communications between GPU and the State of Pennsylvania concerning the hydrogen burn, pressure spike, or containment building spray actuation took place on March 28, 1979.

Interrogatory 6

Identify all lines or methods of communication between GPU and B&W for the period of March 28, 1979 through March 30, 1979. For each such line or method of communication listed above, identify the following:

- (a) the method or line of communication, whether by telephone, in person, by teletype or by some other method;
- (b) all persons participating in each such method or line of communication and/or reporting, and the substance of his/her participation;

- (c) all persons who heard or saw any communications described above;
- (d) the precise time each such method or line of communication was first utilized on March 28, 1979, and the length of time on March 28, 29, or 30, 1979, each was maintained;
- (e) all persons who overheard, saw, or learned from any individual involved in the communications about, the communications described above, and the time, date, reason, and method by which such persons were so informed of the communications;
- (f) all persons who initiated, or suggested or recommended the initiation of, each method or line of communication and/or reporting described above; and
- (g) all documents which refer to, mention, memorialize or otherwise concern the availability or use of any such method or line of communication and/or reporting described above.

Response (6)

The lines and methods of communication between GPU and B&W for the period of March 28, 1979 through March 30, 1979 included telephonic communications and in-person communications.

These lines and methods of communications generally continued through March 30, 1979. As to exact or precise times of such communications, Licensee has no knowledge of times other than as may be reflected in documents provided in the Discovery Room or what has been provided in investigative reports by others.

(See Nuclear Regulatory Commission's Special Inquiry Group Report, Volume II, Part 3, Section A.4.e)

In the late evening of March 29, 1979 or early morning of March 30, 1979, William Lowe, a GPU consultant, informed Don Nitti of B&W by telephone of the hydrogen burn, pressure spike,

and containment building spray actuation which occurred in the TMI-2 containment building at approximately 1:50 p.m. on March 28, 1979. Don Roy or Jim Taylor of B&W may have been with Don Nitti at the time. See notes of William Lowe, available in the Discovery Room. See also the completed questionnaires, available in the Discovery Room; Memorandum from Mitchell Rogovin et al. to Chairman Ahearne (March 4, 1980) at 54-55, and documents cited therein.

Interrogatory 7

Identify all lines or methods of communication between B&W and the State of Pennsylvania and its agencies, offices or officials for the period of March 28, 1979 through March 30, 1979, and answer the questions posed in subparts (a) through (g) above for each such method identified.

Response (7)

Licensee is unaware of any lines or methods of communication or any specific communication between B&W and the State of Pennsylvania and its agencies, offices, or officials for the period of March 28, 1979 through March 30, 1979.

Interrogatory 8

At what time and date did Mr. Miller give an order not to turn on the oil pumps and/or any other equipment in the reactor building so as not to cause a spark which might ignite hydrogen in the reactor. Please state the answer of each of the following persons to this question:

- (a) Gary Miller;
- (b) Brian Mehler;
- (c) Joseph Chwastyk;
- (d) Michael Ross;

- (e) Charles Mell;
- (f) Theodore Illjes.

Response (8)

(a) Gary Miller's response is contained in a questionnaire which he completed at Licensee's request. This questionnaire is available in the Discovery Room. See also NRC Deposition of Gary Miller (Oct. 29, 1979) at 22-23.

(b) Brian Mehler's response is contained in a completed questionnaire, available in the Discovery Room. See also NRC Deposition of Brian Mehler (Oct. 11, 1979) at 15-16, 23-25, and 29-30; NRC Deposition of Brian Mehler (Oct. 30, 1979) at 11-15; and NRC Interview of Brian Mehler (Sep. 3, 1980) at 17-32.

(c) Joseph Chwastyk's response to Licensee's questionnaire has not yet been received. However, see NRC Deposition of Joseph Chwastyk (Oct. 30, 1979) at 15; and NRC Interview of Joseph Chwastyk (Sep. 4, 1980) at 16-21, 36-40.

(d) Michael Ross' response is contained in a completed questionnaire available in the Discovery Room. See also NRC Interview of Michael Ross (Sep. 24, 1980) at 66-67.

(e) Charles Mell's response to Licensee's questionnaire has not yet been received and Licensee does not know Mr. Mell's response.

(f) Theodore Illjes' response is contained in a completed questionnaire available in the Discovery Room. See also NRC Interview of Theodore Illjes (Sep. 24, 1980) at 10-12.

Interrogatory 9

Identify the precise day and time for the three-day period from March 28 through March 30, 1979 that any member of the Command Team and/or think tank had any concern regarding the presence of hydrogen in the containment or reactor coolant system and for each such incident, identify all persons who held such a concern. Identify any conversations, discussions, meetings or communications regarding such concerns and all indicators of the condition of the plant which led that person or persons to hold such a concern. Identify any action taken in response to such concerns.

Response (9)

Licensee is unaware of any member of the Command Team and/or think tank having expressed concern regarding the presence of hydrogen in the containment or RCS prior to late evening on March 29, 1979 or early morning on March 30, 1979. To the knowledge of Gary Miller, no such concern was expressed prior to that period of time. By the morning of March 30, 1979, it was general knowledge that there had been a hydrogen burn in the TMI-2 containment building and that a bubble partly composed of hydrogen was in the RCS. There was a general concern by everyone involved on March 30, 1979 of the presence of hydrogen in the containment building and RCS of TMI-2. Licensee has no knowledge of any expressed concerns by any Command Team and/or think tank member regarding the presence of hydrogen in the containment or RCS other than what has been provided in investigative reports by others.

Interrogatory 10

Describe all incidents and/or experience of any GPU or B&W personnel at TMI concerning electrical malfunctions of equipment during the year preceding the accident.

Response (10)

Licensee asked those GPU and B&W personnel identified as discussed in the introduction, supra, to describe their experience with electrical malfunctions of equipment. Their responses are contained in completed questionnaires available in the Discovery Room.

Interrogatory 11

Describe the length of time it would take for an ascension and descension of an electrical spark or signal due to an electrical malfunction.

Response (11)

Interrogatory 11 is incomprehensible and unanswerable. TMIA identifies neither the piece of equipment of concern nor the source of the spark or signal. Nor does TMIA explain what it means by the "ascension and descension" of a spark or signal. Licensee therefore objects to this interrogatory.

Interrogatory 12

Describe all alarms which were actuated by the pressure spike which occurred at approximately 1:50 p.m. on March 28, 1979. Identify all documents which recorded, referred to, mentioned, or concerned such alarms.

Response (12)

All alarms which were actuated by the pressure spike which occurred at approximately 1:50 p.m. on March 28, 1979 are described on the alarm printout which has been produced in response to this interrogatory and is available in the Discovery Room.

Interrogatory 13

Identify any photographs, drawings, charts or any other graphic representation of the pressure spike and/or the effects of the hydrogen explosion occurring at about 1:50 p.m. on March 28, 1979.

Response (13)

This interrogatory has been responded to as a request for production of documents (see Intervenor Three Mile Island Alert's First Request for Production to General Public Utilities, No. 11) and responsive documents have been placed in the Discovery Room.

Interrogatory 14

Identify all investigations, inquiries, or reports which were conducted by GPU, B&W or any GPU or B&W consultant or contractor concerning the TMI accident or the events occurring on March 28 to March 30, 1979 concerning the TMI accident. For each such investigation, inquiry or report, state the following:

- (a) the person who commissioned, authorized or directed it;
- (b) the person who conducted the investigation or inquiry or who authored the report;
- (c) the date of any report;
- (d) the title of any report; and
- (e) the current location and/or custodian of the report, investigation, inquiry or investigative findings.

Describe the manner or method by which the investigation or inquiry was conducted or the report written, and any persons, documents, or data consulted during the investigation, inquiry or writing of each such report.

Response (14)

The first inquiry or investigation of the pressure spike and the generation and existence of hydrogen occurred during March 29 and 30, 1979, as reported in investigations done by others, such as Memorandum from Mitchell Rogovin et al. to Chairman Ahearne (March 4, 1980) at 52-62. Interviews of GPU and B&W personnel were subsequently conducted. The spike was mentioned in several of these interviews. See Metropolitan Edison Co. Interview of Craig Faust (April 6, 1979); Metropolitan Edison Co. Interview of Brian Mehler (April 25, 1979); Metropolitan Edison Co. Interview of John Flint (April 29, 1979); and Metropolitan Edison Co. Interview of Hugh McGovern (May 4, 1979). In addition, numerous technical inquiries, investigations, and reports on hydrogen were subsequently conducted by GPU, B&W, and their consultants or contractors. See Documents in the Discovery Room.

Interrogatory 15

Identify all communications, discussions, conversations or briefings between GPU and B&W on one hand, and any member of the Committee on the Interior and Insular Affairs or the Subcommittee on Energy and the Environment or the staff of the Committee, on the other hand, occurring on May 7, 1979, during the Committee/Subcommittee's tour of the TMI-2 facility, including but not limited to identification of all communications between Jim Floyd and members and staff of the Interior Committee or Energy and Environment Subcommittee.

Response (15)

Mr. Dieckamp has provided the following statement: "I was present during the briefings and plant tour for members and

staff of the Committee on Interior and Insular Affairs and its Subcommittee on Energy and the Environment on May 7, 1979. During the briefings and tour I communicated with a number of the visitors but cannot recall specific interactions or their content.

"I had previously been in contact with the committee staff to make arrangements for the tour and to establish the agenda. I have been unable to recover any record of the agenda or identification of the GPU participants. I am of the impression that the agenda included a description of the accident, a discussion of the plant status, and a plant tour. I am uncertain about the identification of all participants but believe, on the basis of key personnel, that other participants included R. C. Arnold and J. Herbein and representatives from the communications, security, and health physics functions.

"I do recall the control room tour being guided by J. Floyd and I do generally recall his identification of the containment building pressure recorder(s), and the containment spray controls; his comments on the pressure spike to the effect that it had to be real because of the coincidence requirement for spray initiation; and his reference to the operator response being in direct view of an NRC inspector."

Interrogatory 16

Identify all communications from or to Herman Dieckamp from March 28, 1979 through May 30, 1979, concerning the TMI accident, or any conditions of the reactor or events occurring during the accident.

For all such communications identified, in addition to providing the information required according to Instruction C above, state the following:

- (a) the exact date and time of the communication;
- (b) the person who initiated the communication;
- (c) the purpose of the communication; and
- (d) any action Mr. Dieckamp took as a result of the communication, including but not limited to any action he took to report the information he learned to any other GPU official, the NRC or the Commonwealth of Pennsylvania.

In particular, identify any information either to or from Mr. Dieckamp concerning the following:

- (a) The pressure spike which occurred at approximately 1:50 p.m.;
- (b) The PORV had been open from approximately 4:00 a.m. to approximately 6:00 a.m.;
- (c) The HPI (high pressure injection) had been throttled during the time the PORV had been leaking during the early morning of March 28, 1979;
- (d) Hot leg temperatures in excess of 700 degrees F had existed during the morning of March 28, 1979;
- (e) Temperatures in excess of the saturation temperature indicated the core was or had been in a condition to be cooled by steam rather than water;
- (f) On March 28, 1979, the TMI-2 reactor was in a condition not covered by emergency procedures;
- (g) Certain GPU and/or B&W personnel on site on March 28, 1979, were uncertain prior to noon on March 28, 1979, as to whether the TMI-2 core was being adequately cooled;
- (h) The in-core thermocouple temperature readings for any part of the day of March 28, 1979;
- (i) The neutron detectors mounted inside and outside the reactor pressure vessel indicated increased neutron levels on March 28, 1979;

- (j) The high radiation levels detected by the radiation monitor mounted at the top of the containment building during the morning of March 28, 1979;
- (k) The hydrogen explosion and/or combustion which occurred during the early afternoon on March 28, 1979;
- (l) The actuation of the containment sprays associated with the pressure spike; and
- (m) Any instructions by Mr. Miller or other GPU personnel not to activate any equipment in the reactor building because it might cause a spark and/or a hydrogen explosion;

For any such information flowing to or from Mr. Dieckamp described above, please identify the following for such information:

- (a) The person who supplied the information to Mr. Dieckamp or obtained the information from Mr. Dieckamp;
- (b) The method by which this information was transferred;
- (c) Whether the information was transferred in a person-to-person conversation and/or discussion in written form, over the telephone or telex, or by some other means;
- (d) The exact time, date and place(s) at which the information was transferred;
- (e) The reason or purpose for the communication;
- (f) The person who initiated any such communication;
- (g) Any document referring to, mentioning, documenting or memorializing any such communication;
- (h) The current location or custodian of any such document identified in subpart (g) above;
- (i) If any such document identified in (g) above no longer exists, the circumstances under which it ceased to exist and/or was destroyed; and
- (j) The person or persons to whom the information was transferred subsequent to the time Mr. Dieckamp communicated the information, and the date, time, and place of any such subsequent transfer of information.

Response (16)

Mr. Dieckamp has provided the following statement: "On March 28, 1979 I was in Harrisburg, Pa. for the purpose of meeting with the Pennsylvania Public Utilities Commission (PaPUC) to review the status of Pennsylvania Electric Co. (Penelec). I was in the company of W. A. Verrochi and a number of other Penelec personnel. Prior to the start of the meeting with the PaPUC, someone told me to call Walter Creitz, the president of Metropolitan Edison Co. Sometime just before 9:00 a.m. I reached Mr. Creitz. He told me that there was a problem at TMI-2. I immediately spoke by phone with R.C. Arnold in Parsippany, N.J. About mid morning I became aware of a press conference with Lt. Gov. Scranton. I attended that conference at about 10:30 to 11:30 in the Pennsylvania State Capitol building. At the beginning and at the end of the Penelec meeting with the PaPUC I made brief statements about TMI-2. Sometime in the late morning I became aware of a meeting between Lt. Gov. Scranton and member of the TMI-2 plant staff that was planned for 2:00 p.m. None of these activities or communications involved the pressure spike, hydrogen explosion, spray initiation, or limitations on the operation of equipment in containment.

"In discussions with members of the Lt. Governor's staff in his outer office around 2:00 p.m. there was no mention of the pressure spike, hydrogen explosion, spray initiation, or limitations on the operation of electrical equipment in

containment. The only specific individuals I can recall conversing with are Ray Holz and T. Geruski.

"I left the Lt. Governor's office sometime between 2:00 and 2:30 p.m. and in the course of leaving the State Capitol building encountered J. Herbein, G. Miller, and G. Kunder getting out of a car at about 2:30 p.m. on their way to the meeting with the Lt. Governor. Since they were late, our conversation was very brief and there was no mention of a pressure spike, hydrogen explosion, spray initiation, or limitations on equipment operation in containment.

"I returned from Harrisburg to my home in New Jersey during the afternoon of March 28, 1979. I spoke by telephone with R. C. Arnold. The conversation centered around repressurization of the system and starting of a primary pump. There was no discussion or mention of a pressure spike, hydrogen explosion, spray initiation or limitations on the operation of electrical equipment in containment.

"Early Thursday morning, March 29, 1979, I met with R. C. Arnold in order to sign a memorandum which established a task force to develop an analysis of what we understood at that time to have been a significant transient but did not yet understand to include a loss of coolant accident and significant core damage. Later, I learned that Lt. Gov. Scranton was going to tour the plant at about noon and that a group of congressmen would be at the site in the afternoon. I spoke with a number of people, whom I cannot specifically identify, to ensure that

Scranton was aware of the congressional visit and to arrange to brief the congressional visitors. I traveled to TMI later Thursday morning and arrived some time after noon. At the TMI visitors center I encountered Richard Vollmer of NRC, whom I had known for a number of years, and we chatted about the situation. There was no mention of a pressure spike, hydrogen explosion, spray initiation, or limitations on the operation of electrical equipment in containment.

"For the congressional visitors, I made some brief introductory remarks and J. Herbein gave the briefing on the then current state of knowledge. G. Miller was present and answered some questions. J. Benesh of the State of Pennsylvania was also present. At no time was there any mention of a pressure spike, hydrogen explosion, spray initiation, or limitation on electrical equipment operation in containment.

"A number of the people that we had dispatched to the site to begin an investigation into what was then considered an incident listened in on the Herbein briefing in order to get an overview before proceeding into the plant. I spoke briefly with some of those individuals. I think I remember speaking to R. Wilson and Wm. Lowe; however, at that time they had limited awareness of the details of the March 28 events or the status of the plant. There was no mention of or discussion with these people concerning the pressure spike, hydrogen explosion, spray initiation, or limitations on electrical equipment operation within containment.

"After the congressional visit(s) I returned home to New Jersey during the late afternoon and evening hours. Sometime during the evening of Thursday, March 29, I spoke by phone with R. C. Arnold. We discussed his thinking about the need for additional support of the activities at TMI-2 and I instructed him to proceed to the site on Friday morning, March 30, 1979. During the Thursday evening phone conversation there was no mention of or discussion of a pressure spike, hydrogen explosion, spray initiation, or limitation on equipment operation in containment.

"On Friday morning, March 30, 1979, I went into the Parsippany office of the GPU Service Co. I was discussing the status of TMI-2 with W. G. Kuhns when we learned of the radiation release that focused new attention on the site. My notes indicate that I spoke with R. C. Arnold at about 12:30 p.m. and he relayed general information about the radioactive releases and radiation levels. As a result of the ominous nature of the Friday morning information I began to seek assistance from numerous organizations around the country. My notes contain the first mention of hydrogen in a phone conversation with R. C. Arnold at 2:05 p.m. on Friday March 30. Subsequent phone conversations with Keaten at 2:30 p.m. and 8:20 p.m. and with M. Levinson at 6:20 contain hydrogen related references in the notes.

"The notes from the afternoon and evening of Friday, March 30 indicate that much of the telephone discussion related

to the presence of, the removal of, and the operational problems of non-condensable hydrogen. My notes provide no explicit reference but I think I first learned of the pressure spike sometime on Friday, March 30, 1979. During the Friday/Saturday night I stayed in the office and was in contact with the site and remember speaking on several occasions with Wm. Lowe concerning hydrogen with particular reference to the radiolytic decomposition of water.

"My activities in the period out through April, 1979 are summarized in the response to Interrogatory Nos. 54, 55, 56 and 58. During April and May my activities and communications were too numerous to recount and my memory would not support such detail. Beyond the Mailgram of May 9, 1979, the next record of communications relative to the pressure spike are contained in my letter dated June 14, 1979, Congressman Udall in response to his inquiry of May 29, 1979."

Mr. Dieckamp's statement will be supplemented to the extent required by the ASLB Order ruling on Licensee's Motion for Protective Order.

Interrogatory 17

Identify all persons who knew at or around 8:00 a.m. on March 28, 1979, that the PORV had been open from about 4:00 a.m. to about 6:20 a.m., including a statement about the status of the knowledge of the following persons:

- (a) Ken Bryan;
- (b) Mike Ross;
- (c) Bill Zewe;

- (d) Brian Mehler;
- (e) George Kunder;
- (f) Gary Miller;
- (g) Jim Floyd;
- (h) Robert Arnold;
- (i) Herman Dieckamp; and
- (j) J. G. Herbein.

If any of the above-listed persons had any such knowledge, identify all persons to whom they communicated such knowledge, and the time, date, location and purpose of each such communication.

Response (17)

Licensee's response will be provided by supplement to the extent required by the ASLB Order ruling on Licensee's Motion for Protective Order.

Interrogatory 18

Identify all persons who had knowledge or information around 8:00 a.m. on March 28, 1979, that the HPI had been throttled during the time the FORV had been leaking. Include in your answer the following persons: Ken Bryan; Mike Ross; Bill Zewe; Brian Mehler; George Kunder; Gary Miller; Herman Dieckamp; J. G. Herbein; Robert Arnold; Jim Floyd; Edward Frederick; and Craig Faust;

For any person identified above, identify all persons to whom he subsequently communicated such information and the time, date, purpose and location of any such communication.

Response (18)

Licensee's response will be provided by supplement to the extent required by the ASLB Order ruling on Licensee's Motion for Protective Order.

Interrogatory 19

Identify all persons who had knowledge of information around 8:00 a.m. on March 28, 1979 that hot leg temperatures in excess of 700 degrees had existed on that day. Include in your response the answers of the following persons to this question: Mike Ross; Bill Zewe; Brian Mehler; George Kunder; Gary Miller; John Flint; James Seelinger; Jim Floyd; Robert Arnold; J. G. Herbein; Craig Faust; and Edward Frederick.

For any person identified above, identify all persons to whom he subsequently communicated such information, and the time, date, purpose and location of any such communications. Answer the same question with respect to the same persons and their knowledge or information of hot leg temperatures at 9:00 a.m.; noon; and 2:00 p.m. on March 28, 1979.

Response (19)

Licensee's response will be provided by supplement to the extent required by the ASLB Order ruling on Licensee's Motion for Protective Order.

Interrogatory 20

Identify all persons who had knowledge or information on March 28, 1979 that temperatures in excess of the saturation temperature indicated that the core was or had been in a condition where it had been cooled by steam rather than water. Include in your response the answers of the following persons: Ken Bryan; Mike Ross; Bill Zewe; Brian Mehler; George Kunder; Gary Miller; John Flint; James Seelinger; Jim Floyd; Robert Arnold; J. G. Herbein; Edward Frederick; Craig Faust; Joseph Chwastyk; and Robert Long.

For any person identified above, identify all persons to whom he subsequently communicated such information, and the time, date, purpose and location of any such communication.

Further, for each person identified above, state whether he knew or had knowledge on March 28, 1979 that temperatures in excess of 700 degrees F. were temperatures in excess of the saturation temperatures.

Response (20)

Licensee's response will be provided by supplement to the extent required by the ASLB Order ruling on Licensee's Motion for Protective Order.

Interrogatory 21

Identify all persons who believed, had information or had uncertainty prior to noon on March 28, 1979 as to whether the TMI-2 core was being adequately cooled. Include in your response the answers for the following persons: Ken Bryan; Mike Ross; Bill Zewe; Brian Mehler; George Kunder; Gary Miller; John Flint; James Seelinger; Jim Floyd; Robert Arnold; Edward Frederick; Craig Faust; Joseph Chwastyk; and Robert Long.

For any person identified above, identify all other persons to whom he subsequently communicated such information, belief or uncertainty, and the time, purpose and location of any such communication.

Response (21)

Licensee's response will be provided by supplement to the extent required by the ASLB Order ruling on Licensee's Motion for Protective Order.

Interrogatory 22

Identify all persons who had knowledge or information on March 28, 1979 that the TMI-2 reactor was in a condition not covered by emergency procedures, and for each such person state the time, or times during which he first held or was informed of such information and/or belief. Include in your response the answers of the following persons: Ken Bryan; Mike Ross; Bill Zewe; Brian Mehler; George Kunder; Gary Miller; John Flint; James Seelinger; Jim Floyd; Robert Arnold; Edward Frederick; Craig Faust; Joseph Chwastyk; and Robert Long.

Response (22)

Licensee's response will be provided by supplement to the

extent required by the ASLB Order ruling on Licensee's Motion for Protective Order.

Interrogatory 23

Identify all persons with information or knowledge on March 28, 1979 of the pressure spike which occurred at approximately 1:50 p.m., and for each such person identified above, identify the time or times at which he learned or was informed of the pressure spike.

For any person identified above, identify all persons to whom he subsequently communicated such information, and the time, date, purpose and means of any such communication.

Response (23)

The information requested is contained in completed questionnaires, available in the Discovery Room.

Interrogatory 24

Identify all persons with information or knowledge on March 28, 1979 that a hydrogen explosion and/or combustion had occurred during the afternoon on March 28, 1979, and identify the time or times at which he learned or was informed of the explosion and/or combustion. For any persons identified above, identify all persons to whom he subsequently communicated such information, and the time, date, purpose and means of any such communication.

Response (24)

The information requested is contained in completed questionnaires, available in the Discovery Room.

Interrogatory 25

Identify all persons with information or knowledge on March 28, 1979 of the actuation of the containment sprays at approximately 1:50 p.m. on March 28, 1979, and for each such person identified above, identify all other persons to whom he subsequently communicated such information and/or knowledge.

Response (25)

The information requested is contained in completed questionnaires, available in the Discovery Room.

Interrogatory 26

Identify all persons with information and/or knowledge on March 28, March 29, or March 30, 1979 of any instruction by Mr. Miller or any other GPU personnel not to activate equipment in the reactor building because it might cause a spark and/or a hydrogen explosion. For any such person identified above, in addition, identify the following with respect to his information and/or knowledge:

- (a) Any other persons with similar information, and the means by which he/she acquired that information;
- (b) The means by which that person learned or was informed of the instructions;
- (c) The person who gave such instructions and the reason(s) for giving such instructions;
- (d) All persons who responded to or acted upon such instructions, and the specific actions he/she took in response to such instructions; and
- (e) Any documents which refer to, mention, memorialize or otherwise concern such instructions.

Response (26)

The information requested is contained in completed questionnaires, available in the Discovery Room.

Interrogatory 27

At what time(s) on March 28, 1979 did Command Team or Emergency Team personnel decide to employ and begin to implement a repressurization strategy? At what time on that date did the Command Team or Emergency Team personnel cease the depressurization strategy?

If either answer given above is other than the closing of the block valve at 3:08 p.m., explain the discrepancy between your answer and Mr. Chwastyk's testimony that a change was made from a depressurization to a repressurization strategy at the time of closing the block valve.

Response (27)

Licensee's response will be provided by supplement to the extent required by the ASLB Order ruling on Licensee's Motion for Protective Order.

Interrogatory 28

Identify all persons who instructed Emergency Team personnel to cease the depressurization strategy and begin a repressurization strategy, the precise time such directions were given to all persons identified above, and the persons to whom such directions were given.

Response (28)

Licensee's response will be provided by supplement to the extent required by the ASLB Order ruling on Licensee's Motion for Protective Order.

Interrogatory 29

What were the reason or reasons for changing strategy to bring the reactor under control? Include in your answer, any indicators of the reactor's condition which led Emergency Team personnel to change the strategy.

Response (29)

Licensee's response will be provided by supplement to the extent required by the ASLB Order ruling on Licensee's Motion for Protective Order.

Interrogatory 30

If Mr. Miller is not identified above as the person who gave the order to change to a repressurization strategy, explain how emergency Team personnel acted without his direction.

Response (30)

Licensee's response will be provided by supplement to the extent required by the ASLB Order ruling on Licensee's Motion for Protective Order.

Interrogatory 31

What role, if any, did Robert Arnold play in changing from a depressurization to a repressurization strategy?

Response (31)

Licensee's response will be provided by supplement to the extent required by the ASLB Order ruling on Licensee's Motion for Protective Order.

Interrogatory 32

Identify all persons who heard a "thud," "thump" or other noise indicating that hydrogen or some other explosion or anomaly had occurred around 1:50 p.m. on March 28, 1979. For each person identified above, state the following:

- (a) His belief at that time of the cause or reason for the noise;
- (b) Any communication he had with any other person about the noise at any time on March 28, March 29 or March 30, 1979; the substance of those communications, and the exact time of the communications;
- (c) The first time he believed the noise was caused by a hydrogen explosion or hydrogen combustion, whether or not he so understood it at 1:50 p.m. on March 28, 1979;
- (d) Any action he or anyone else took after hearing the noise in response to the noise. Include an identification of the person taking such action, and the exact time of any such action; and
- (e) Any document recording, memorializing, referring to, mentioning, or concerning in any way the noise.

Response (32)

The information requested is contained in completed questionnaires, available in the Discovery Room.

Interrogatory 33

Identify all persons who became aware at any time of any alarm actuated by the pressure spike and/or hydrogen explosion occurring around 1:50 p.m. on March 28, 1979.

For each such person identified above, state the following:

- (a) His belief at the time he became aware of the alarm or the cause or reason for the alarm;
- (b) Any communications of this person with any other person concerning the alarm and the time, date and substance of those communications, and the persons with whom he communicated;
- (c) Any action he or any other person took after becoming aware of the alarm; and
- (d) Any document recording, memorializing, mentioning, referring to, or concerning in any way any such alarm.

Response (33)

The information requested is contained in completed questionnaires, available in the Discovery Room.

Interrogatory 34

Identify and state in as precise words as possible, the substance of the conversation and/or discussions between or among Mr. Miller, Mr. Dieckamp and Mr. Herbein on March 28, 1979, including but limited to the conversations which occurred between them from approximately 2:00 p.m. when Mr. Miller left the site to meet with the Pennsylvania Lt. Governor and approximately 5:30 p.m., when Mr. Miller returned to the site.

Response (34)

Mr. Dieckamp has provided the following statement: "At

about 2:30 p.m. on Wednesday, March 28, 1979, I encountered and spoke with Messrs. Herbein, Miller, and Kunder on the steps of the Pennsylvania State Capitol Building. The conversation was very brief because they were late for what was to have been a 2:00 p.m. appointment with the Lt. Governor. I expressed concern that those three individuals could be absent from the plant if there was a problem. From the exchange I received the impression that the plant was stable. There was no mention of a pressure spike, containment spray actuation, or hydrogen.

"In a recent conference call with J. Herbein and G. Miller, I was informed that they had no discussion between them on March 28, 1979 concerning a pressure spike, containment spray actuation, or hydrogen. This position is consistent with their statements in a letter to Congressman Udall dated June 12, 1979, which states that they first became aware of the pressure spike, containment spray actuation, and hydrogen on Friday, March 30, 1979."

Mr. Dieckamp's statement will be supplemented to the extent required by the ASLB Order ruling on Licensee's Motion for Protective Order.

Interrogatory 35

Identify all investigations, inquiries or probes GPU or the NRC has made to determine why the operators' logs describe the pressure pulse which occurred at approximately 1:50 p.m. on March 28, 1979 as 4 psi and 5 psi when the magnitude of the pulse was in fact 28 psi.

Explain the reason or reasons the operators' logs erroneously recorded the magnitude of the pressure spike.

Response (35)

Licensee has not undertaken any investigation, inquiry, or probe to determine why the operator's logs describe the pressure spike which occurred in the TMI-2 containment building at approximately 1:50 p.m. on March 28, 1979 as 4 psi and 5 psi when the magnitude of the pulse was approximately 28 psi. Licensee is unaware of any specific NRC investigation, inquiry, or probe concerning this matter, although the NRC questioned at least Donald A. Berry and Control Room operators Zewe, Scheimann, Frederick, Faust on this matter in connection with the NRC's investigation of the March 28, 1979 accident at TMI-2. These interviews, which have been placed in the Discovery Room, provide the individuals' explanation of the entries in the operator's logs.

Interrogatory 36

At what time or times on March 28 through March 30, 1979 did the hydrogen recombiner become actuated? For each time identified above, identify the following:

- (a) The manner in which the actuation was recorded;
- (b) The documents which record, memorialize, mention or otherwise concern the actuation, and their current location;
- (c) All persons who had knowledge or were informed of the actuation of the hydrogen recombiner at or near the time of actuation;
- (d) The persons to whom each person identified in subpart (c) above communicated the fact of the actuation of the hydrogen recombiner; and
- (e) The mode of actuating the hydrogen recombiner, including whether it was actuated automatically or manually.

Response (36)

To the best of Licensee's knowledge, the hydrogen recombiner was not actuated any time between March 28, 1979 through March 30, 1979.

Interrogatory 37

Explain the location of the in-core thermocouple data recorded with a digital voltmeter for the period from March 28 through May 7, 1979.

Response (37)

Licensee's response will be provided by supplement to the extent required by the ASLB Order ruling on Licensee's Motion for Protective Order.

Interrogatory 38

Explain the meaning of Mr. Miller's recorded comments to Mr. Troffer at Met-Ed at approximately 9:30 a.m. on March 28 which are recorded in a transcript of that date: ". . . to be honest with you, we've been assessing the plant. . . . We don't know where the hell the plant was going. The situation we're in is a delicate one because we actually have plant integrity. . . . If we had a leak we'd be all right."

Response (38)

Licensee's response will be provided by supplement to the extent required by the ASLB Order ruling on Licensee's Motion for Protective Order.

Interrogatory 39

Explain the meaning of Mr. Miller's additional recorded comments to Mr. Troffer as recorded in a transcript of March 28, 1979: ". . . in addition to this, the plant obviously experienced a pressure and temperature change fairly fast. I didn't say this to them -- I'm just saying it to the group." What details did he not communicate to

the Commonwealth of Pennsylvania authorities with whom he communicated earlier that morning?

What were the reason(s) for Miller not telling and/or withholding these details from the Commonwealth of Pennsylvania authorities? Did he at or about 9:30 a.m. communicate the details identified above to the NRC? If so, to whom did he communicate the information and at what time or times?

Response (39)

Licensee's response will be provided by supplement to the extent required by the ASLB Order ruling on Licensee's Motion for Protective Order.

Interrogatory 40

Did GPU inform the NRC of the following on March 28, 1979, and if so, who communicated the information; to whom at the NRC did he communicate the information; and at what precise hour did he communicate the information?

- (a) It appeared the PORV had been opened and/or leaking from approximately 4:00 a.m. to about 6:20 a.m.;
- (b) The HPI had been throttled during the time the PORV had been open and/or leaking;
- (c) Temperatures in excess of 700 degrees F. had been measured in the hot legs;
- (d) Temperatures in excess of 700 degrees F. had been measured on the in-core thermocouples;
- (e) Temperatures in excess of 2000 degrees F. had been measured on the in-core thermocouples;
- (f) The plant was in a condition not provided for in emergency procedures;
- (g) Some GPU personnel were uncertain as to whether the core was in a condition where it was being adequately cooled on March 28, 1979;
- (h) Radioactivity measurements on a reactor coolant sample indicated failure of a substantial portion of the fuel rods; and

- (i) A pressure pulse had been recorded on reactor building pressure measuring instrumentation.

If GPU did not inform the NRC on March 28 of any of the matters stated in subparts (a) through (i) above, state the date, time, and means by which that information was communicated to the NRC at any later time; the person who communicated such information; and the reason(s) for communicating such information to the NRC at that time.

If GPU did not communicate any matters stated in subparts (a) through (i) above to the NRC at any time, explain why not.

Response (40)

(i) Late Thursday evening March 29, 1979 or early Friday morning, March 30, 1979, Metropolitan Edison Company verbally notified the NRC of the pressure pulse which had occurred in the TMI-2 containment building at approximately 1:50 p.m. on March 28, 1979. Licensee is unaware of who specifically advised the NRC of the pressure pulse. Metropolitan Edison Company's notification to the NRC followed its appreciation of the significance of the pressure pulse during this time frame.

There is testimony that NRC personnel in the TMI-2 control room at approximately 1:50 p.m. on March 28, 1979 may have seen the indication of the pressure pulse or were told of it by Metropolitan Edison Company personnel. See Response 2(b).

Interrogatory 41

Answer the question posed in Interrogatory No. 40 above, including all subparts therein with respect to the Commonwealth of Pennsylvania instead of the NRC.

Response (41)

- (i) Metropolitan Edison Company did not inform the

Commonwealth of Pennsylvania on March 28, 1979 of the pressure pulse. Licensee does not know when or how any communication about the pressure pulse was made to the Commonwealth of Pennsylvania.

Interrogatory 42

Describe all checks which were made of plant conditions and/or containment within four hours after the occurrence of the pressure spike and/or the activation of the reactor building spray pumps. For each such check described above, state the following:

- (a) The person or persons who made such check;
- (b) Any document referring to, recording, memorializing or otherwise concerning any such check;
- (c) Any action taken as a result of or in response to any such check; and
- (d) All persons who were informed on March 28, 1979 of the results of such checks and any action he took as a result of or in response to that information.

Response (42)

A number of individuals have acknowledged awareness of the occurrence of the pressure spike or containment spray actuation and to observing plant conditions through instrumentation at the time of such occurrence. At least two individuals, L. Rogers and J. Chwastyk, have intimated in prior statements that a check of containment was made. Mr. Rogers is a former B&W employee, and Mr. Chwastyk is a former GPU Nuclear employee. Neither individual is currently employed within the GPU System. Licensee is not aware of the bases for their prior comments. Licensee is unable to confirm that any such check of

containment was performed in response to the pressure spike or actuation of the reactor building spray. Licensee is unaware of any specific plant parameters subsequently being monitored in response to the pressure spike or containment spray actuation.

See Statement of Leland Rogers (June 12, 1979) at 22; NRC Interview of Brian Mehler (Sept. 3, 1980) at 15; NRC Interview of Joseph Chwastyk (Sept. 4, 1980) at 11-12; NRC Interview of William Zewe (Sept. 4, 1980) at 44; NRC Interview of Gary Miller (Sept. 5, 1980) at 123; NRC Interview of Michael J. Ross (Sept. 24, 1980) at 48-49; NRC Deposition of Edward Frederick (Oct. 9, 1980) at 6; NRC Deposition of Craig Faust (Oct. 9, 1980) at 8-9; NRC Deposition of Joseph Scheimann (Oct. 9, 1980) at 5; NRC Deposition of Joseph Logan (Oct. 16, 1980) at 55; NRC Deposition of Adam Miller (Oct. 28, 1980) at 9-11; NUREG-0760 at 27-28; and Majority Staff of the Committee on Interior and Insular Affairs, "Reports of Information Concerning the Accident at Three Mile Island" (March 1981) at 73-75, 97.

Interrogatory 43

Answer the following with respect to Leland Rogers' Memorandum or Statement of 3/28/79 Unit II Transient, dated June 12, 1979, at page 22:

- (a) Describe all checks made of plant conditions and/or the containment in response to the pressure spike and/or activation of the reactor building spray pumps;
- (b) Identify all persons who made any such checks and all persons to whom the results of such checks were communicated;

- (c) Identify all documents which recorded, memorialized, mentioned, referred to or otherwise concerned such checks, and their current location;
- (d) Identify the operator cited in the sixth sentence of the second paragraph on page 22;
- (e) Identify all members of the monitoring teams mentioned in the seventh sentence of the second paragraph on page 22; and
- (f) Explain the basis for the conclusion noted in the fifth sentence of the second paragraph on page 22 that, "The transient conditions were a result of a rapid reaction between the H₂ or O₂ in the containment and occurred coincident with a continued long period of system venting to the containment."

Response (43)

For the response to (a), (b), and (c), see the response to Interrogatory 42.

(d) L. O. Wright

(e) Licensee has a record of results of site radiological monitoring which reflect at 1405 on March 28, 1979, that a measurement was made "around Unit-2 Rx bldg," but no record was made as to the individuals that performed the measurement and reported same.

(f) Licensee is unable to state what Mr. Rogers intended to convey in that sentence with respect to his awareness at any particular point in time. Mr. Rogers' Statement appears to be an overview of the events at TMI-2 prepared for purposes other than to identify his contemporaneous knowledge of events.

Interrogatory 44

State GPU's position as to whether any misstatements, inaccurate statements or false statements were made in the Dieckamp mailgram to Congressman Morris Udall. Identify

all such misstatements, inaccurate statements and/or false statements.

Interrogatory 45

State the time at which GPU first learned of such misstatements, inaccurate statements or false statements identified in response to Interrogatory No. 44 above. Identify all persons who learned of such misstatements, false statements or inaccurate statements, and identify all persons to whom they communicated such information; the date, time and reasons for which they communicated such information; and the action which GPU took in response to such information.

Interrogatory 46

Identify any discussions, conversations, communications or contacts concerning the false statements, inaccurate statements or misstatements identified in response to Interrogatory No. 44 above.

Interrogatory 47

Identify any action taken by GPU, including but not limited to any actions taken by Mr. Dieckamp after learning of the false statements, inaccurate statements or misstatements identified above, including but not limited to any action taken by GPU to correct the false statements, inaccurate statements or misstatements.

State the reason for failing to take any such action if your answer is that no action was taken by GPU to correct the false statements, inaccurate statements or misstatements identified above.

Response (44), (45), (46), (47)

Mr. Dieckamp has provided the following statement: "I am unaware of any misstatements, inaccurate statements, or false statements in the Mailgram.

"To the extent that some would construe the 'no evidence' statement to be contradicted by the testimony of Chwastyk, Mehler, and Illjes, that 'evidence' was adduced subsequent to the Mailgram statement. The testimony of Chwastyk, Mehler, and

Illjes which is sometimes cited as evidence does not 'interpret the pressure spike and spray initiation in terms of reactor core damage.'

"Subsequent independent investigators have examined the state of understanding on the day of the accident and concluded:

The investigators conclude that hydrogen was not discussed as a cause for the pressure spike on March 28, 1979. There was no acknowledged cause for the spike on that date. It is concluded that the order not to restart electrical equipment was given on some day subsequent to March 28, 1979.

NUREG 0760, p. 28.

"The statement, '. . . . nor that anyone withheld any information' relates to the pressure spike and its interpretation. The pressure spike or some manifestation thereof was known to a number of people on the day of the accident and its occurrence was not officially conveyed to all potentially interested parties on that day. I do not believe that information about the pressure spike and its interpretation was consciously withheld. The NRC's Special Inquiry Group and NUREG 0760 reach a similar conclusion."

Interrogatory 48

When did GPU first become aware of the substance of the interviews conducted by the NRC in preparation of the I&E Report? When did GPU first become aware of and/or review the I&E interviews of Brian Mehler and Joseph Chwastyk? Identify all persons to whom the substance of such interviews was communicated at any time prior to January, 1981.

When did Mr. Dieckamp first become aware of the substance of the interviews of Brian Mehler and Joseph Chwastyk.

Identify all persons who informed Mr. Dieckamp of the substance of these interviews and identify all communications between such persons and Mr. Dieckamp concerning the two interviews.

Response (48)

Mr. Dieckamp has provided the following statement: "The Mailgram was sent to Congressman Udall on May 9, 1979. An I&E interview of Brian Mehler was conducted on May 17, 1979, and an I&E interview of Joseph Chwastyk was conducted on May 21, 1979. The transcript of the Mehler interview indicates that it was typed on July 2, 1979, and the transcript of the Chwastyk interview indicates that it was typed on July 10, 1979. I do not know when I first became aware of the Chwastyk May 21, 1979 and Mehler May 17, 1979 interviews. I became aware of continuing interest by the Udall committee in the pressure spike by way of a letter from Udall to me dated May 29, 1979, which asked for answers to a number of questions including ones relating to the pressure spike. I next became aware of continuing committee interest by way of questions from the Udall committee to the NRC dated January 21, 1980 and February 4, 1980. My first real awareness of the contents of the Chwastyk May 21, 1979 and Mehler May 17, 1979 interviews may have been by way of the March 4, 1980 Rogovin/Frampton Memorandum to the NRC Re Questions Submitted by Congressman Udall.

"I have a record of having received a copy of the Chwastyk May 21, 1979 interview from John Wilson on January 29, 1981, and at about the same time I received a copy of a April 25,

1979 GPU interview of Mehler from E. Blake, of Shaw, Pittman, Potts & Trowbridge.

"I most likely became aware of the content of the interviews conducted by the NRC in preparation of the I&E Report when NUREG 076C was published.

"A number of people within GPU had access to the I&E interviews of Chwastyk and Mehler, but I have no recollection of being informed by anyone of the substance of these interviews. I think my awareness derived from published documents."

Interrogatory 49

Identify all persons within GPU who held any responsibility to keep informed about and track the interviews conducted by the NRC concerning the TMI-2 accident.

Response (49)

W. Behrle arranged and tracked the interviews which were conducted by I&E in connection with its investigation in preparation of NUREG 0600. Licensee will supplement this response to the extent required by the ASLB Order ruling on Licensee's Motion for Protective Order.

Interrogatory 50

Identify all persons within GPU who held any responsibility to stay informed about or track interviews conducted in the course of preparation of the Rogovin Report.

Response (50)

J. F. Wilson and J. Guerin arranged and tracked the interviews which were conducted by the NRC Special Inquiry Group in connection with its investigation in preparation of the

"Rogovin" Report. Licensee will supplement this response to the extent required by the ASLB Order ruling on Licensee's Motion for Protective Order.

Interrogatory 51

Identify all GPU personnel and/or attorneys who attended any part of any I&E interviews and/or Rogovin Report interviews.

For all persons identified above, identify all notes, memoranda, minutes or other documents they maintained concerning such interviews and all persons to whom such notes, memoranda, minutes or other documents were distributed.

Response (51)

The following individuals representing GPU attended interviews conducted by the NRC in conjunction with its investigation which led to NUREG 0760 and/or the NRC Special Inquiry Group:

E. L. Blake, Jr., Esq.
D. E. Davidson, Esq.
J. B. Liberman, Esq.
W. B. Reynolds, Esq.
D. A. Ridgeway, Esq.
M. F. Travieso-Diaz, Esq.
J. F. Wilson, Esq.
A. R. Yuspeh, Esq.

The last paragraph of this interrogatory has been responded to as a request for production of documents (see Intervenor Three Mile Island Alert's First Request for Production to General Public Utilities, No. 11) and documents maintained by these individuals have been placed in the Discovery Room. Licensee will supplement this response to the extent required by the ASLB Order ruling on Licensee's Motion for Protective Order.

Interrogatory 52

For what purpose did Mr. Dieckamp send a mailgram to Congressman Udall on May 9, 1979. Identify all persons whom Mr. Dieckamp consulted prior to sending the telegram, and the substance of any communications with such persons. Identify all communications between Mr. Dieckamp and Mr. Floyd concerning the subjects discussed in the mailgram.

Response 52

Mr. Dieckamp has provided the following statement: "The purpose of the May 9, 1979 Mailgram to Congressman Udall was to take exception to the newspaper commentary on the Congressman's visit to TMI on May 7, 1979 that appeared on May 8, 1979 in the New York Times. I do not today recall the specific individuals, if any, that may have been consulted in the course of drafting the Mailgram. I did not consult with J. Floyd. My reference to him in the Mailgram is a direct reflection of what I heard him say to the congressional visitors during the control room tour on May 7, 1979."

Interrogatory 53

What is the basis for Mr. Dieckamp's statement in the mailgram that Mr. Floyd's statement that certain activity was in view of the NRC inspectors in the control room at the time of the accident referred to activation of the containment building spray and not to the pressure spike?

Response 53

Mr. Dieckamp has provided the following statement: "The basis for the subject comment was my recollection of Mr. Floyd's statements that I heard in the course of the briefing of congressional visitors in the TMI-2 control room on May 7, 1979. The Mailgram attempted to convey that the turning off of

the containment spray was in view of the NRC inspectors. The Mailgram makes no statement about the pressure spike in this context."

Interrogatory 54

What was the basis for Mr. Dieckamp's statement in the mailgram that, "There is no evidence that anyone interpreted the 'pressure spike' and the spray initiation in terms of reactor core damage at the time of the spike nor that anyone withheld any information."

Describe the information to which Mr. Dieckamp was referring in the latter portion of this statement.

Interrogatory 55

What was the basis for Mr. Dieckamp's statement in the fifth paragraph of the mailgram which suggests that the evening of Thursday, March 29, was the first time GPU learned of the pressure spike and postulated it to be the results of a hydrogen oxygen explosion within the containment building?

Interrogatory 56

What was the basis for Mr. Dieckamp's statement in the fifth paragraph of the mailgram which suggests that the first time GPU took measurements intended to determine the extent of a hydrogen bubble within the primary reactor cooling loop was some time after the technical staff first reviewed the spike on the evening of Thursday, March 29.

Describe the measurements to which Mr. Dieckamp referred in the fourth sentence of the fifth paragraph of the mailgram, and identify all documents which record, memorialize, mention, refer to, or otherwise concern such measurements.

Interrogatory 58

Identify all information and/or knowledge Mr. Dieckamp held on May 8, 1979 and May 9, 1979 regarding the interviews and investigation being conducted by GPU concerning the TMI-Accident; events which occurred on March 28, March 29 and March 30, 1979; the conditions of the TMI-2 reactor on March 28, March 29 and March 30, 1979; and reporting of any such events or conditions to the NRC and/or the Commonwealth of Pennsylvania.

Identify all documents which mention, refer to, record, memorialize or otherwise concern any information and/or knowledge identified above.

Response (54), (55), (56), (58)

Mr. Dieckamp has provided the following statement: "An incident investigation task force had entered the plant during the late afternoon of Thursday, March 29. I became aware of the reactor building pressure spike sometime on Friday, March 30, 1979. In telephone conversations with personnel at the site, most likely Mr. R. C. Arnold, I was told of the pressure spike recording being brought to the attention of the task force during the night of March 29. The task force postulated a zirconium water reaction as the source of the hydrogen. The presence of hydrogen was recognized as being consistent with the off-normal pressure volume behavior of the primary system. The postulate also caused the plant staff to take steps to take a containment building gas sample and to take steps to permit operation of the hydrogen recombiner. The first containment building gas sample was taken at about 4:00 a.m. on March 31.

"Records indicate that the initial measurements of the non-condensable gas in the primary system were completed at about 0300 on March 30, 1979. The volume of the non-condensable gas in the primary system was measured by observing the system pressure change associated with a change in the water volume in the primary system. Documents relating to such measurements are contained in the Discovery Room.

"After moving to the site on the afternoon of Saturday, March 31, I was in routine conversation with key members of the plant staff, the task force, the NRC, and the industry advisory group that had been formed. In these interactions I became aware of the confirmation of hydrogen through the analysis of the containment building gas sample(s) which contained hydrogen and showed a depletion in the normal atmospheric oxygen concentration. This depletion afforded the first indication of the amount of reacted zirconium and thus the first 'quantitative' indicator of the degree of zirconium reaction and thus core damage. I was also directly involved in the concern about the potential explosivity of the hydrogen bubble, the primary cooling system vulnerability to high concentrations of non-condensable and/or dissolved gas, and the strategies employed to remove the hydrogen from the reactor primary system.

"During the first few weeks of April I remained at the site. I availed myself of the early GPU operators' interviews, sat in on preliminary reviews of the sequence of events, participated in status reviews with the onsite NRC staff, coordinated the activities of the industry advisory group and generally participated in the management of the accident.

"During the third week in April I drew upon this awareness and the developing learnings, including an investigation of the closed emergency feed valves and the G. Miller report based on a taped conversation and reconstruction of the day of the accident, to assemble testimony for presentation to the Nuclear

Regulation Subcommittee of the Senate Committee on Environment and Public Works.

"Prior to May 9, 1979, I did not conduct any exhaustive investigation of the pressure spike and its interpretation but I had given the subject considerable attention in the course of preparing the testimony because the spike, its identification with the Zr/H₂O reaction, the verification and quantification of the hydrogen, and the subsequent analysis of the degree of fuel cladding reaction was a meaningful way to identify the difficulty in recognizing the scale of the accident and the time necessary to derive enough information for some quantification of the core damage.

"From the considerable information available to me prior to May 9, 1979, I had a very clear understanding of the delayed recognition and interpretation of the pressure spike. I also heard or saw no indication that the pressure spike had been properly diagnosed or that it caused the plant staff on March 28 to change or adopt a strategy for bringing the plant to cold shutdown that recognized the presence of hydrogen or non-condensable gas. Prior to May 9, 1979, I knew that a pressure spike had been observed on the day of the accident but my overall awareness caused me to conclude that no one recognized the significance of the spike in terms of core damage on March 28.

"The latter portion of the Mailgram statement refers to the pressure spike and its interpretation. It was my

conclusion that no one could have made a conscious decision to withhold information about the spike."

With respect to Interrogatory No. 58, Mr. Dieckamp's response will be supplemented to the extent required by the ASLB Order ruling on Licensee's Motion for Protective Order.

Interrogatory 57

Identify all investigations, inquiries, studies or reports authored by GPU or any consultant hired by GPU regarding the Dieckamp mailgram to Congressman Udall and/or whether Mr. Dieckamp made any material false statement in that mailgram.

For all such investigations, inquiries, studies or reports identified above, indentify the following:

- (a) The person(s) who conducted, wrote, or participated in the investigation, investigative report, inquiry, study, or report;
- (b) The purpose for the investigation, inquiry, study, or report;
- (c) Any documents, including any reports or studies which resulted from the investigation, inquiry or study;
- (d) The current location of any documents identified in subpart (c) above; and
- (e) Any disclosure made of such investigations, inquiries, studies or reports to the NRC, and the date of any such disclosure.

Response 57

Licensee has conducted no investigations, inquiries, studies, or reports nor has it hired any consultants regarding the May 9, 1979 mailgram to Congressman Udall.

Respectfully submitted,

SHAW, PITTMAN, POTTS & TROWBRIDGE

Ernest L. Blake, Jr.

Ernest L. Blake, Jr., P.C.
David R. Lewis

Counsel for Licensee

Dated: September 4, 1984

September 4, 1984

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

DOCKETED
USNRC

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

'84 SEP -5 A11:54

In the Matter of)
)
METROPOLITAN EDISON COMPANY)
)
(Three Mile Island Nuclear)
Station, Unit No. 1))

OFFICE OF SECRETARY)
DOCKET NO. 50-289)
(Restart-Management Remand))

CERTIFICATE OF SERVICE

I hereby certify that copies of "Licensee's Response to Three Mile Island Alert's First Set of Interrogatories and First Request for Production," dated September 4, 1984, were served this 4th day of September, 1984 by deposit in the U.S. mail, first class, postage prepaid, to the parties on the attached Service List.

Ernest L. Blake, Jr.

Ernest L. Blake, Jr., P.C.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter)
)
METROPOLITAN EDISON COMPANY) Docket No. 50-289 SP
) (Restart Remand on Management)
(Three Mile Island Nuclear)
Station, Unit No. 1))

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