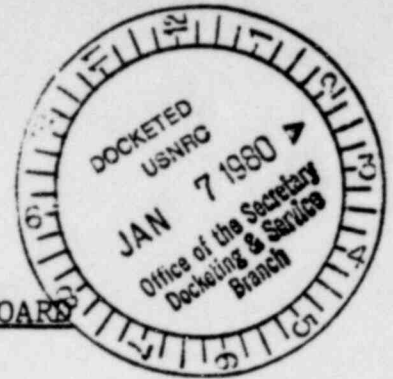


UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD



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

Docket No. 50-289  
(Restart)

INTERVENOR STEVEN C. SHOLLY  
INTERROGATORIES TO LICENSEE  
(FIRST SET)

Steven C. Sholly, Intervenor, hereby files the following interrogatories and document requests pursuant to 10 CFR 2.740 and 10 CFR 2.741. Interrogatories and document requests are arranged according to Contention numbers utilized in filings beginning 22 October 1979 and continuing (Contentions #1 through #17). Contention numbers appear first followed by interrogatory or document request number within the particular contention (ex., 13-001 refers to the first interrogatory or document request for Contention #13).

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01-001--What are the bases for containment isolation for  
Unit No. 1?

01-002--For each parameter utilized for containment isolation, describe how the parameter is sensed or determined to exist; also describe the accuracy of the sensing device or determination method with respect to the frequency for failure to detect the condition and frequency for yielding a false signal.

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01-003--Provide a list of procedures identified by number and title, with a summary of their content, which are concerned with containment isolation initiation and reset.

01-004--What conditions must be met before containment isolation is permitted to be reset after initiation?

01-005--Who can certify that the conditions for reset have been met (identify by position, individual names not necessary)?

01-006--How is it assured that containment isolation is not inadvertently reset?

01-007--How is the operability of the containment isolation system tested?

01-008--How often is containment isolation tested?

01-009--Who does the test of containment isolation and who verifies the results of the test (identify by position).

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02-001--Identify and provide copies of all reportable occurrences which involved in any manner the pressurizer PORV at both Unit 1 and Unit 2.

02-002--Provide a maintenance history for the Unit 1 pressurizer PORV, or identify by number and place of availability the work orders, reports, or other documentation which would permit such a history to be compiled if it is not currently available.

- 02-003--Identify and provide copies of documents relating to the environmental qualification testing for the pressurizer PORV in Unit 1, including what organization performed the testing, the methods used, the results of the testing, and the reliability of the results in terms of confidence limits or other appropriate statistical expression.
- 02-004--What modifications will be made prior to restart to ensure the availability to operators of an unambiguous signal of the position of the PORV on the pressurizer and its associated block valve?
- 02-005--What is the expected operational lifetime for a PORV of the type in the Unit 1 pressurizer?
- 02-006--When was the Unit 1 pressurizer PORV installed and when was it first subject to operating conditions of temperature and pressure?
- 02-007--At what point in the expected operational lifetime of the Unit 1 pressurizer PORV is this valve due to be replaced?
- 02-008--Specify changes in operator training which have been implemented to assure that operators will recognize a stuck-open PORV in a timely manner and implement the necessary operational changes which will prevent a recurrence of an accident similar to Unit 2.
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- 03-001--Specify the instrumentation utilized to detect hydrogen gas concentrations in the reactor containment.
- 03-002--For the instrumentation referred to in 03-001, provide data on the frequency of failure to detect hydrogen gas, failure to correctly display the actual hydrogen gas concentration, and yielding a false signal when there is no hydrogen gas present.
- 03-003--For the instrumentation referred to in 03-001, provide the limits of detection and the accuracy of the instrumentation in the ranges of 0-10% and 90-100% of full scale.
- 03-004--For the instrumentation referred to in 03-001, provide the maintenance, surveillance, and testing procedures applicable to this instrumentation.
- 03-005--What means are utilized to assure that if concentrations of hydrogen are detected in the reactor containment which are in the range of either combustion or detonation that inadvertent combustion or detonation are avoided?
- 03-006--Identify specific procedures which provide assurance that conditions which favor the generation of hydrogen gas are avoided?
- 03-007--Specify operator training which has been implemented to assure that operators are aware of conditions which favor the generation of hydrogen, conditions under which hydrogen combustion and/or generation occur, and the rapid rate at which hydrogen can be generated under

certain conditions such as the Unit 2 accident.

03-008--What is the calculated maximum reactor building pressure which can be withstood by the containment structure without exceeding the design leak rate or causing containment failure?

03-009--Specify and detail the procedure utilized to calculate the pressure referred to in 03-008.

03-010--Specify conditions under which operators are permitted to either reduce ECCS flow rate or cease ECCS flow.

03-011--Who must verify that the conditions referred to in 03-010 have been met and how is this verification accomplished?

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04-001--What are the bases for determining the number, locations, and types of radiation monitoring devices used to determine radiation doses to off-site locations around Unit 1?

04-002--How much time is required under ideal conditions to collect, process, read, interpret and communicate radiation dose results for TLD's utilized in the environmental radiation monitoring program?

04-003--With reference to the actions described in 04-002, how much time would be required under adverse conditions such as bad weather, severe traffic congestion due to a protective evacuation, and strikes affecting



- the number of personnel available for such activity?
- 04-004--Provide verification that Licensee has the capability to comply with the requirements of Health Physics Procedure 1670.6 or its current equivalent.
- 04-005--Specify procedures utilized to calculate radiation doses for off-site locations which do not contain a TLD within the same compass direction and same distance range from Unit 1.
- 04-006--With reference to 04-005, further specify the accuracy of these procedures in terms of confidence limits or other similar appropriate statistical expression.
- 04-007--Identify the name, address, and technical capabilities of all contractor firms utilized in the environmental radiation monitoring program.
- 04-008--With respect to the firms identified in 04-007, further specify the nature and extent of services provided by each contractor firm.
- 04-009--Specify on a year by year basis the dollar amount spent by Licensee on activities related to offsite radiation monitoring activities.
- 04-010--Provide the time necessary under ideal and adverse conditions to provide officials with emergency preparedness responsibilities in the Plume Exposure EPZ with radiation exposure data.
- 04-011--Describe the on-site TLD processing capability which

is currently possessed by the Licensee and that which will exist at the time of Restart.

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- 05-001--Specify the gaseous effluent radiation monitoring capabilities which will exist at the time of Restart for all effluent discharge pathways required under General Design Criteria #64, 10 CFR 50.
- 05-002--For each device which is in place to monitor gaseous radioactive effluents, provide the operating range in terms of curies per second, precision of the measurement, and the accuracy of each device in the ranges of 0-10% and 90-100% of full scale in terms of confidence limits or other appropriate statistical expression.
- 05-003--Specify the procedures by number, title, and summary which are utilized to convert gaseous effluent radiation monitoring device data into radiation dose estimate for off-site locations.
- 05-004--With reference to 05-003, specify the confidence levels with respect to the accuracy of these conversions or describe same in other appropriate statistical expressions.
- 05-005--Specify the gaseous effluent radiation monitors which can provide on-scale data under conditions of the maximum release rate experienced in the Unit 2 accident, as well as for releases one and two orders

magnitude higher than those maximum release rates (suggested as possible in NUREG-0578).

05-006--Specify the maximum release rate which can be accurately determined by gaseous effluent radiation monitors for radioiodine.

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06-001--Provide a maintenance history for the Unit 1 Integrated Control System (ICS), or identify by number and place of availability the work orders, reports, or other documentation which would permit such a history to be compiled if it is not currently available.

06-002--Provide a listing by date of all previous feedwater transients and the involvement of the ICS in either initiating or terminating these transients.

06-003--Specify the instrumentation to be used to provide unambiguous indication to operators of inadequate core cooling.

06-004--With reference to 06-003, specify the operating range of the instrumentation and the accuracy of the instrumentation at ranges of 0-10% and 90-100% of full scale in terms of confidence limits or other appropriate statistical expression.

06-005--With reference to 06-003, specify the frequency of failure of the instrumentation to detect inadequate core cooling, to provide inaccurate information as to the degree of lack of adequate core cooling, and



frequency of providing false reading of inadequate core cooling.

06-006--Specify the date by which the high-range effluent monitor system will be installed.

06-007--Specify the date by which Licensee's review of the basis for recombiner use will be completed.

06-008--With reference to the review of recombiner basis, specify who is performing the review and what methods will be utilized in the review.

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07-001--Specify the spectrum of accidents utilized to assure compliance with Appendix K of 10 CFR 50.

07-002--Specify all on-going work related to LOCA's and the Emergency Core Cooling System (ECCS), including dates initiated, who is performing the analyses, the expected completion dates for the analyses, and whether the analyses will be subject to NRC review and approval.

07-003--For the analyses referred to in 07-002, provide any available preliminary results.

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08-001--Provide copies of all documents, transcripts, tapes, memoranda, letters, and files which relate to the basis for the 10-mile Plume Exposure Emergency Planning Zone as proposed in Emergency Plan.

08-002--Specify the methods of analysis utilized in determining the adequacy of the 10-mile radius for the Plume

Exposure EPZ and provide calculations used to support this distance.

- 08-003--Identify by name, title, affiliation, and professional background (i.e., engineer, health physicist, etc.) all persons who provided input to or performed analyses used in the determination of the 10-mile Plume Exposure EPZ.
- 08-004--Provide a copy of the entire contents of the Emergency Plan Implementing Document, including all Emergency Procedures.
- 08-005--Specify the methods utilized to determine the sufficiency of the Emergency Action Levels proposed by the Emergency Plan.
- 08-006--Identify specifically, based upon guidance contained in NUREG-0396, how the Emergency Plan considers the impact on emergency planning of Class 9 accidents.
- 08-007--Specify the means to be utilized by the Licensee to notify the people in the EPZ's (both Plume and Ingestion) in the event of an emergency at Unit 1, including evidence that these means are always available in a timely manner for the use of the Licensee in conveying appropriate emergency notifications.
- 08-008--Identify specifically how the Licensee intends to notify transients within both EPZ's (both Plume and Ingestion) in the event of an emergency.

- 08-009--Provide copies of the most recent letters of agreement with local government agencies, local support organizations, contractor support organizations, and state and federal agencies.
- 08-010--With regards to the letters of agreement noted in 08-009 above, provide details of any such group which has refused to update a letter of agreement since the Unit 2 accident, including copies of letters requesting such updates, copies of responses from the groups, and any communications with the Nuclear Regulatory Commission regarding such refusals.
- 08-011--Specify how the Emergency Plan is coordinated with the Security Plan, the Radiation Protection Plan, and all other plant operating procedures and plans.
- 08-012--Specify the bases for the Licensee's classifications of events in the revised Reg. Guide 1.101 classification of types of emergencies.
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- 09-001--Provide copies of plans, procedures, and diagrams which detail the Licensee's radiological monitoring plans under both normal and emergency conditions.
- 09-002--Specify the types of TLD's utilized in the radiological monitoring program, including bounds of accuracy and the sensitivity of each type to beta radiation.

09-003--Specify the training which radiation protection and health physics personnel receive, and how this training has been updated since the Unit 2 accident.

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10-001--Specify the basis on which reasonable assurance exists that decontamination and restoration activities at Unit 2 will not affect the safe operation of Unit 1.

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11-001--How long is required, under both ideal and worst case conditions, to install a hydrogen recombiner at Unit 1 of the type proposed in the Licensee's Restart Report?

11-002--How much hydrogen gas was generated during the Unit 2 accident?

11-003--What is the maximum pressure the Unit 1 containment can withstand without experiencing catastrophic failure?

11-004--How many curies of radiation would have been released to the environment if the Unit 2 containment had been vented to control combustible gas concentrations in the containment if the venting occurred at one hour before the occurrence of the 28-psig spike on March 28? Specify radionuclides and amounts.

11-005--How many curies of radioactivity (specify radionuclides and amounts) would have been released to the environment if the venting had occurred at the 3rd and 7th days after the Unit 2 accident?

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12-001--Provide copies of all information provided to the Nuclear Regulatory Commission in conjunction with the Staff's "environmental appraisal" of the Restart of Unit 1.

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13-001--Provide specific information relating to the proposed new computer for Unit 1, including make and model, and specifications.

13-002--For each printer to be used with the new Unit 1 computer, specify the printer speed (in characters per second, lines per minute, or other appropriate units) and the type of printer (whether character or line printer).

13-003--What is the storage capacity of the computer?

13-004--What type of storage is utilized (disc, magnetic tape, etc.)?

13-004--What is the storage capacity of the electronic memory of the computer?

13-005--Specify the environmental parameters under which the computer and printers are qualified to operate.

13-006--Specify how the computer and printers meet the single-failure criterion.

13-007--Describe all output devices utilized with the computer, including capability for graphing trends.

13-008--How is data organized in the computer (i.e., as by index file or direct file)?



13-009--Specify how real-time display of data is assured under all conditions, including those encountered during the Unit 2 accident.

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14-001--Specify the technical resources which Licensee has at its command within 30 minutes of a declaration of a Site or General Emergency.

14-002--Specify exactly how plant operating procedures have been modified to assure prompt initiation and completion of all steps required in emergency situations.

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15-001--Provide copies of all documents, including tapes, letters, memoranda, transcripts, and files relating to human factors review of the design of the Unit 1 reactor control room.

15-002--Detail how Licensee is responding to Lessons Learned Task Force recommendations on control room design.


15-003--Detail how Licensee is responding to "Kemeny" Commission recommendations on control room design.

15-004--Provide copies of all complaints from control room operators and senior reactor operators regarding alarm displays in Unit 1.

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Respectfully submitted,

DATED: 27 December 1979

  
Steven C. Sholly  
304 South Market Street  
Mechanicsburg, PA 17055  
(717) 766-1851 817 220

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

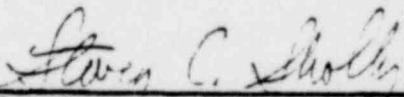
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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

}  
Docket No. 50-289  
(Restart)

CERTIFICATE OF SERVICE

I, Steven C. Sholly, hereby certify that a single copy of INTERVENOR STEVEN C. SHOLLY INTERROGATORIES TO LICENSEE (FIRST SET) was hand delivered to the Three Mile Island Observation Center in Middletown, marked to the Attention of Mr. John Wilson, for service to all parties in this proceeding according to Licensee's procedures for making such service, such delivery taking place on this 3<sup>RD</sup> day of January, 1980.

  
Steven C. Sholly

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

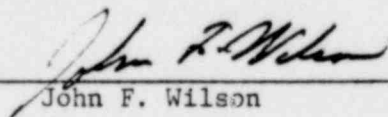
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Station, Unit No. 1) )

Docket No. 50-289  
(Restart)

CERTIFICATE OF SERVICE

I hereby certify that copies of Interrogatories To Licensee of Steven C. Sholly dated December 27, 1979, which was hand delivered to Licensee at Three Mile Island Observation Center, Middletown, Pennsylvania, on January 3, 1980 were served upon those persons on the attached Service List by deposit in the United States mail, postage paid, this 4th day of January, 1980.

  
\_\_\_\_\_  
John F. Wilson

Dated: January 4, 1980

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of )  
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METROPOLITAN EDISON COMPANY ) Docket No. 50-289  
 ) (Restart)  
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