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RELATED CORRESPONDENCE

UCS 9/4/84

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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

Docket No. 50-289 SP  
(Restart-Management Remand)

UNION OF CONCERNED SCIENTISTS' RESPONSE TO LICENSEE'S FIRST SET OF INTERROGATORIES AND FIRST REQUEST FOR PRODUCTION OF DOCUMENTS TO UCS

U-1(a). State the name, present or last known address, and present or last employer of each person, other than affiant, who provided information upon which UCS reviewed in answering each interrogatory herein.

(b). Identify all such information which was provided by each such person and the specific interrogatory response in which such information is contained.

These interrogatory responses were prepared by affiant after general discussions with Robert D. Pollard, Union of Concerned Scientists, and William S. Jordan, Harmon, Weiss and Jordan, concerning UCS's positions in this proceeding. The responses were reviewed in their totality by Robert D. Pollard.

U-2(a). Identify all documents upon which you relied in answering each interrogatory herein.

(b). Identify the specific interrogatory response(s) to which each such document relates.

The documents are identified in the responses.

U-3(a). Identify any other source of information, not previously identified in response to interrogatories U-1 or U-2, which was used in answering the interrogatories set forth herein.

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(b). Identify the specific interrogatory response(s) to which each source of information relates.

Each source of information is identified in the appropriate response.

U-4. Identify the concerns UCS has about the adequacy of the licensed operator training program at TMT.

At this stage, prior to discovery, UCS's concerns are generally the same as those identified by the Special Master, ASLB and Appeal Board.

The concerns are summed up by the Appeal Board as follows: "Is the instruction adequate to prepare the operators to operate the plant safely?" ALAB-772, Sl.op. at 63.

More specific concerns at this time relate to 1) whether the content of the training program encompasses the skills and knowledge necessary to operate the plant under accident or unusual conditions, 2) whether the tests are adequate to accurately evaluate whether the operators possess these skills and knowledge, 3) whether memorization plays too great a role in the training and testing programs, 4) whether the training and tests are in conformance with current plant procedures and design, 5) whether the tests are properly reviewed for difficulty and validity, 6) whether GPU management has instilled the appropriate attitude in its training and operations staff, 7) whether the program is being properly implemented, 8) whether the OARP Review Committee conclusions are correct and based on adequate first-hand knowledge and observation, 9) whether the instructors are qualified and effective. These concerns are subject to modification and addition based upon the information to be gained through on-going discovery.

U-5. Identify the basis for each of the concerns identified in response to interrogatory U-4.

1. LBP-82-34B, 15 NRC 918 (1982) and transcript citations therein, including but not limited to 15 NRC 1014-1020.

2. LBP-82-34B and transcript citations therein, including but not limited to 15 NRC 1014-1020, 1026-1035, 1054-5.

3. LBP-82-34B and transcript citations therein, including but not limited to 15 NRC 1014-1020, 1026-1035, 1054-1055.

4. General knowledge concerning the frequency and large number of continuing changes to the TMI-1 plant procedures, including ATOG procedures, and the many changes in plant design.

5. LBP-82-34B and transcript citation therein, including but not limited to 15 NRC 1014-1020, 1026-1035.

6. LBP-82-34B and transcript citations therein, including but not limited to 15 NRC 954-965, 1044-1046, 990-1013, 1049-1054. GPU's treatment of individuals such as G & H, Shipman, Husted, Long, and Newton. GPU's position that Floyd did not cheat when he handed in the work of another as reflected in its litigation position and in the "Speaker Report."

7. The basis for this concern is a combination of these cited above.

8. The Special Report of the Reconstituted OARP Review Committee, June 12, 1984.

9. The fact that disdain for the training program was widespread, including among training instructors. (See ALAB-772 at 64 and transcript citations); the consistent findings of the Special Master and ASLB regarding the actual content and method of instruction of the TMI-1 training program, the emphasis in memorization at the expense of or as a substitute for understanding (e.g. 15 NRC 1014-1020); licensee's treatment of individuals such as Messrs. Husted, Long, Newton, and Frederick; the fact that the current head of licensed operator training, Frederick, has flunked his examination.

U-6. Identify the remedy that UCS considers appropriate to respond to each of the concerns identified in response to interrogatory U-4.

UCS has not formulated a comprehensive list of remedies at this stage nor determined whether it will undertake to do so. At a minimum, UCS would consider it necessary that an independent team of educational psychologists and persons familiar with nuclear plant design and operations review the content of the training program and its past and current implementation, interview operators and instructors, review the OARP-related as well as current qualification and requalification written and oral tests for difficulty and validity, determine the extent to which memorization is used as a substitute for understanding, compare the training and tests against current procedures and plant design. By "independent," UCS means persons not in the pay of GPU or the NRC, not thoroughly identified with or dependent upon the nuclear industry and not in a position of having to defend the accuracy of previous testimony given in this case.

UCS also believes that questions of attitude and integrity are involved in this issue and we seriously doubt that GPU training programs can be effectively administered by persons who bear responsibility for the conditions which caused widespread disdain for the training program, persons who bear responsibility for GPU's response to the cheating episodes - a response which UCS considers egregiously inadequate, persons who do not acknowledge or understand that the training program revealed by the evidence in the creating hearings was a failure. There has been a wide gulf in this case between theory and practice, or between how the program was characterized on paper versus how it was actually carried out. The existence of so wide a gulf, and the fact that it would presumably never have been discovered had not obvious cheating occurred on NRC exams, indicates the large degree to which the effectiveness of the training program is dependent upon the persons and organization implementing it.

U-7. Does UCS consider memorization an inappropriate learning technique? If so, explain why. If not, explain the basis on which UCS would assess whether memorization is being used as an effective learning technique.

Memorization in excess or as a substitute for or at the expense of understanding is inappropriate. It does not reveal much about an operator's ability to confront a new and different situation. If used to excess, it detracts from his/her ability to learn the necessary concepts. Nor does an operator's ability to spout memorized phrases provide assurance that he/she possesses the skills necessary to operate a nuclear plant.

U-8. How would UCS determine what training is necessary to ensure that operators are able to run the plant?

See the first paragraph in response to question U-6 above.

U-9. Identify the specific subject-area(s) in Licensee's licensed operator training program that UCS believes require enhancement.

U-10. For each subject-area identified in response to Interrogatory U-9, explain the basis for UCS' view that training in that area should be enhanced.

U-11. Explain how, in UCS' view, each of the subjects identified in response to Interrogatory U-9 should be enhanced.

UCS is not currently in possession of sufficient information to permit it to respond to these questions.

U-12. In UCS' view, does the format of Licensee's exams encourage cheating? Provide the basis for your answer.

In UCS's view, the format and implementation described at 10 CFR 1014-1020 and citations therein encourages cheating because memorization of word formulas was emphasized as a substitute for understanding and the same questions asked over again on make-up rounds. It became known to candidates that the examiners were looking for certain key words. Therefore, cheating could be an effective way to pass the test.

U-13. Identify the standard on which UCS relies to determine whether the format of Licensee's exams encourage cheating.

UCS believes that an exam encourages cheating to the extent that it is overly reliant on rote memorization. The appropriate degree of reliance is a matter of judgment.

U-14. Does UCS believe licensed operators should be required to spend additional time at the simulator? If so, explain the basis for your answer.

U-15. Does UCS believe licensed operators should be tested on the simulator? If so, explain the basis for your answer.

UCS has not yet formed an opinion on these subjects.

U-16. Does UCS believe that the licensed operators are capable of safely operating TMI-1 during normal operation or accident conditions? If not, explain the basis for your answer, especially as it relates to any perceived deficiencies in the training program.

UCS believes that the answer to this question is indeterminate. We believe that the system of GPU training and GPU and NRC testing as described on the evidentiary record in this case does not provide reasonable assurance that the operators are capable of safely operating TMI-1. Whether some or how many are so capable is a matter of conjecture.

U-17. Identify any documents on which UCS relies to support its position in response to Interrogatory U-16.

UCS relies on the decision of the Special Master and portions of the decision of the Licensing Board and transcript citations in both.

U-18. What capabilities, if any, would you require operators to have that you believe they presently lack?

As noted above (U-16), we believe that, on the basis of the current evidentiary record, it is not possible to make a reliable judgment as to which skills operators have and which they lack.

U-19. In UCS' opinion, do Licensee's exams reliably measure the operators' ability to safely operate TMI-1? If not, why not?

UCS believes that the exams as described on the evidentiary record do not reliably measure the operators' ability to safely operate TMI-1 for the general reasons stated at paragraph 251 of the Report of the Special Master, 15 NRC 1020.

U-20. Identify each deficiency UCS believes exists in Licensee's examinations.

At this stage, we would concur with the statement of deficiencies of the Special Master, cited above. We expect during the process of discovery that our listing of deficiencies may well change.

U-21. Does UCS believe the NRC exams should be relied upon as a reliable measure of an operator's ability to safely operate TMI-1? If not, why not?

UCS believes that the NRC rules require that the NRC exam be a reliable measure of the operators' ability to safely operate TMI-1. In particular, 10 CFR 55.11(b) requires that each applicant for a license pass a written examination and operating test "to determine that he has learned to operate and, in the case of a senior operator, to operate and to direct the licensed activities of licensed operators in a competent and safe manner." See also 10 CFR 55.20, 55.22, 55.23 (content of exams). In addition, in this case, the Commission's order of August 9, 1979, required retraining and re-examination by both GPU and NRC of all TMI-1 operators in areas related to the TMI-1 accident. CLI-79-8, 10 NRC 141, 144-5 (1979). UCS thinks it beyond serious dispute that such requirements for NRC examinations necessarily imply that the examinations given must be a reliable measure of the operators' ability to safely operate the plant.

However, the evidentiary record in this case also indicates that the NRC exams are not a reliable measure of the operators' ability to safely operate

the plant. As noted in the Report of the Special Master, the NRC examiners were heavily dependent upon the TMI-1 staff for answers to the questions, and the NRC exams relied heavily upon rote memorization, were not respected by the operators, and asked about design details rather than testing ability to solve a problem. 15 NRC 1026-1035.

U-22. Does UCS believe the NRC exams are relied upon by Licensee's a reliable measure of an operator's ability to safely operate TMI-1? Explain the basis for UCS' view.

GPU has no choice but to "rely" on NRC exams; its operators must pass those exams or they will not be permitted to operate TMI-1. Whether GPU believes that the NRC exams are, in fact, a reliable measure of an operator's ability to safely operate TMI-1 is within GPU's own knowledge.

U-23. Identify the concerns UCS has about the TMI licensed operator training program, if any, based on its review of the RHR Report.

U-24. Identify each specific portion (i.e., particular page(s) and particular statement(s) of the RHR Report on which UCS relies in formulating its response to Interrogatory U-23.

UCS has not completed its review of the RHR Report. As a preliminary matter, we consider it a matter of concern that a substantial number of operators express doubts about the relevance of the training to their actual operational duties - ". . . only 60% of those who responded agreed that the content of the last exam was job relevant and only one third agreed that the oral portion of the exam tested how one would act in an emergency." "Priority Concerns of Licensed Nuclear Operators at TMI and Oyster Creek and Suggested Action Steps," Final Report, March 15, 1983, (hereinafter "RHR Report"), unnumber page headed "Licensing, Requalification and Training.

Other concerns relate to:

1. A significant minority of operators do not believe that the requalification program promoted safety. Id.



2. Almost 3/4 of the operators were dissatisfied with the training for licensing and even more with the requalification training. Id.

3. Most operators considered the training department as not oriented to the needs of the operators. Id., next unnumbered page.

4. Most operators believe there is not enough training on plant conditions. Id.

5. Three out of four operators believe that the training does not prepare them for what they actually do; instead, it prepares them to pass exams. Id.

There are many other specific findings contained in the RHR Report, written in 1983, which undermine the opinions of the OARP Review Committee and indicate that the Special Master was correct in his findings regarding the content and administration of the GPU training programs and that these conditions persist.

U-25. Identify the concerns UCS has about the TMJ licensed operator training program, if any, based on its review of the BETA Report.

U-26. Identify each specific portion (i.e., particular page(s) and particular statement(s) of the BETA Report on which UCS relies in formulating its response to Interrogatory U-25.

UCS has not reviewed the BETA Report.

U-27. Identify any criticisms UCS has of the Special Report of the Reconstituted OARP Review Committee, dated June 12, 1984.

U-28. Identify each specific portion (i.e., particular page(s) and particular statement(s) of the Special Report of the Reconstituted OARP Review Committee on which UCS relies in formulating its response to Interrogatory U-27.

UCS's review of the Special Report is ongoing. In general, our criticisms new are as follows:

1. The Special Report is conclusory in nature. While a great many documents are listed in Table A-2 as having been "provided by GPU Nuclear to

the Committee for their review," the Report does not indicate how many were actually reviewed, nor does the body of the Report, in all but a few cases, indicate which documents support which conclusions. One must thus take the conclusions of the the Committee largely on faith.

2. The Committee states in many places that its time and resources were "limited." Indeed, the Committee itself concedes that "the primary bases the Committee members have for re-assessing the effectiveness of the training program is the material provided to the Committee by GPU Nuclear..., its discussions with management personnel, mostly from the Training and Education Department, and the performance of operators on NPC administered and NRC-sanctioned, GPU Nuclear administered examinations." (p. 73) Only one operator was even interviewed. (Table A-1) The Committee did not conduct a "quality assurance check" on the documents given it by GPU. (p.3) It is our opinion that such a limited "review" is manifestly insufficient to enable the Committee to reach an informed judgment regarding the remanded issues.

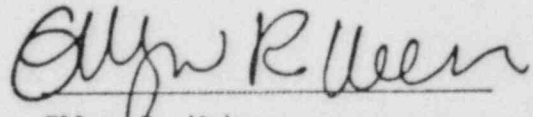
3. UCS questions whether the qualifications of the/committee members are adequate to permit them as a committee to reach many of the conclusions contained in Chapter V.

4. The conclusions in Chapter V are highly generalized and relate in many cases to GPU managements' "commitment" and "determination" rather than to the actual content or effectiveness of the training program. Considering that 15 out of 17 individuals "contacted" by the Committee were GPU management (Table A-1), this is not surprising.

5. The Special Report does not evidence an understanding or grasp of the nature or scope of the cheating and lack of integrity documented in the evidentiary record. (See e.g., p. 65)

6. The Committee evaded the questions of integrity and judgment by relying on paper qualifications. (e.g., pp. 16-19)

Submitted by:

A handwritten signature in cursive script that reads "Elyn R. Weiss". The signature is written in dark ink and is positioned above the typed name.

Elyn R. Weiss  
Harmon, Weiss & Jordan

General Counsel  
Union of Concerned Scientists

Dated: September 4, 1984

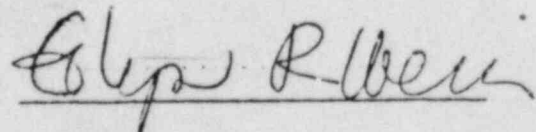
UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

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

AFFIDAVIT OF ELLYN R. WEISS

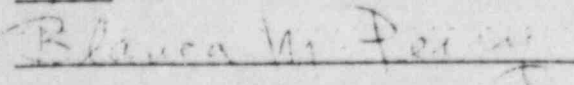
I, Ellyn R. Weiss, having been sworn, do hereby affirm that the answers contained in the foregoing "Union of Concerned Scientists' Response to licensee's First Set of Interrogatories and First Request for Projection of Documents to UCS" are true and accurate to the best of my knowledge and belief.



Ellyn R. Weiss

\_\_\_\_\_  
Washington, D.C.

Sworn and subscribed before me this  
4<sup>th</sup> day of September, 1984:



Notary Public

My Commission Expires April 30, 1987

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

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

CERTIFICATE OF SERVICE

I hereby certify that copies of "UNION OF CONCERNED SCIENTISTS' RESPONSE TO LICENSEE'S FIRST SET OF INTERROGATORIES AND FIRST REQUEST FOR PRODUCTION OF DOCUMENTS TO UCS" have been served on the following persons by deposit in the United States mail, first class postage prepaid, this 4th day of September 1984, except as indicated by an asterisk.

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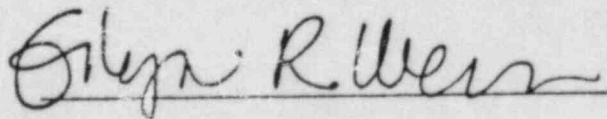
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