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October 29, 1984
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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF SECRETARY
FOR NUCLEAR SAFETY

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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

LICENSEE'S ANSWERS TO UNION OF
CONCERNED SCIENTISTS' SEVENTH SET OF
INTERROGATORIES TO GENERAL PUBLIC UTILITIES

Licensee General Public Utilities Nuclear Corporation (GPU Nuclear), pursuant to 10 C.F.R. § 2.740b, hereby submits the following answers to "Union of Concerned Scientists' Seventh Set of Interrogatories and Document Requests to General Public Utilities." The provision of answers to these interrogatories is not to be deemed a representation that Licensee considers the information sought to be relevant to the issues to be heard in this remanded proceeding.

INTERROGATORIES

7-1. Identify all current TMI training instructors who have completed the GPUN Instructor Development Program mentioned in the Special Report of the Reconstituted OARP Review Committee and state the date when the individual completed the program.

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ANSWER.

7-1. The attendance of licensed operator instructors at the GPUN Instructor Development Program is summarized below:

<u>Instructor</u>	<u>Date Attended</u>
G. S. Barber	6/83
F. Perry	4/84
D. Boltz	11/80
F. Kacinko	11/82
D. Wilt	11/82
B. Leonardo	11/83

7-2. Describe in detail the oral examination given at the end of the operator training program. Include in your description how the oral examination is given, the number of people involved in giving the examination, the time that each examination takes, the number of questions, and any guidelines used for constructing the examination, such as the subjects that must be covered and the methods used for formulating questions.

ANSWER.

7-2. See response to UCS First Set of Interrogatories #14. The respective programs include guidance on number of personnel designated to give examinations.

7-3. Provide the grading criteria, if any, used to evaluate performance on the oral examination, including the minimum passing grade on the examination. List the grounds for failure on the oral exam, and state who has final authority to determine whether an operator has passed or failed the oral exams. Describe the process used by GPU to determine the grade to be given on the oral examination, including all possibilities for review or alteration of the initial grades.

ANSWER.

7-3. Final examination grades on oral examinations are either pass or fail. A minimum overall passing grade of "pass" is required for the examination. The person designated to administer the oral examination determines the final examination grade prior to submittal of the oral summary sheet to Operator Training. Each examiner is tasked with evaluating the candidate's ability to operate the plant in a competent and safe manner.

The oral board summary sheet with final grade is forwarded to the Supervisor, Licensed Operator Training for review. This review includes ensuring designated areas received grades, weak and fail (unsatisfactory) areas are documented with amplifying information, and that the final grade reflects the comments documented by the examiner. As required, oral examinations are reviewed as a group to determine generic weaknesses.

Examination grades cannot be altered except by the person who administered the exam.

7-4. Describe all screening processes used by GPU for the evaluation of candidates going through the training program, including any evaluations of the adequacy of the operator candidates during the course of the training program.

ANSWER.

7-4. Candidates are evaluated during the training process by the following:

1. Weekly quizzes during classroom training.
2. On the job training task and Final Verification checkouts.
3. OJT spot checks.
4. Simulator Operational Evaluation.
5. Final Comprehensive Oral Examination.
6. Final Comprehensive Written Examination.
7. Requirements for Certification of Candidates for NRC Operator Licenses and Instructor Certifications.

Items 1-6 are described in the respective training programs.

7-5. Have any operator candidates been removed from GPU's training program as a result of such a screening process? If yes, list the number of candidates removed and the reasons why the candidate was eliminated.

ANSWER.

7-5. Three candidates have been removed from the reactor operator replacement program since 1981 due to not meeting program requirements. Several candidates have voluntarily removed themselves from the program due to academic difficulties.

7-6. Identify and describe all GPU evaluations on operators licensed since January 1983, including, but not limited to, evaluations by the Supervisor of Licensed Operator Training cited on page 13 of the Replacement Operator Training Program Descriptions.

ANSWER.

7-6. Candidates who have been licensed since January 1983 have been enrolled in the Licensed Operator Requalification Program and are not evaluated under the Replacement Operator Training Program.

7-7. Describe GPU's procedure to be followed if a candidate fails the Replacement Operator Training Program.

ANSWER.

7-7. Candidates who have been removed from the Replacement Operator Training Program due to failure to meet program requirements are normally returned to the job classification held prior to placement in the program.

7-8. Does GPU consider failure of an NRC mock exam equivalent to failure in the Replacement Operator Training Program? If not, what are GPU's procedures in the case of failure on a mock examination? State the criteria by which GPU decides what additional training a candidate should receive after failing a mock NRC examination, and whether the candidate should take another mock NRC examination. Describe any retraining that a candidate must undergo before retaking the exam. In addition, list the maximum number of times that a candidate may retake a mock NRC examination. If there is no maximum, state the criteria by which GPU determines, after one or more failures by the same individual, whether the individual should be allowed to remain in the training program.

ANSWER.

7-8. The administrative requirements for failures of the comprehensive (mock) examination are outlined in the Replacement Operator Training Program description. Failure of the comprehensive examination does not require automatic removal of the candidate from the training program.

Upon failure of a mock examination, the candidate's training record is reviewed by the Supervisor, Licensed Operator Training, Operator Training Manager, and Manager, Plant Operations. Each candidate's record is reviewed considering (1) performance during OJT, (2) weekly quiz grades during program, (3) comprehensive exam grades, (4) attitude, and (5) performance during simulator training. The decision to administer reexams is made by the Operator Training Manager and Manager, Plant Operations. There is no established limit on the number of reexams per candidate. This decision is made as described above.

Retraining required prior to examination retakes is developed on the basis of deficiencies exhibited during the comprehensive examination and the overall training program.

7-9. Describe the capabilities of the simulator in use at the TMI-1 training program, including in your description whether the simulator has the capability of adaptive variation to adjust to an operator's weaknesses, and whether the simulator has the ability to record and to store data on transactions between the operator and the control room such as the operator's time of reaction and the number of errors made by the operator.

ANSWER.

7-9. The BPT simulation of plant operation is based on full scope simulator software of a nuclear generating station similar in design to TMI-1. It provides the capability to simulate in real time normal and abnormal conditions, both transient and steady state. The trainee console consists of a vertical display panel and horizontal control panel. The display

panel contains a mimic drawing illustrating TMI systems and appropriate actuation switches, parameter display meters and annunciators. The control panel contains major controls and some parameter displays. The CRT's are also available for trend display of plant parameters as well as selected calculated data, like spatial xenon concentration or axial and radial core power distribution.

An instructor's console with a CRT provides a means of controlling and monitoring the BPT's operation. The instructor can utilize such features as:

1. Initialization to one of 30 plant conditions.
2. Backtrack or ability to return to prior conditions.
3. Manual time delay or insertion of malfunctions.
4. Fast time -- slow time capability.
5. Control of certain functions external to the control room.

Inside the BPTS

The interactive mimic and schematic control panel give the student an overall view of the entire plant and the necessary controls to operate. The student observes the effect of a particular decision on all or part of a system. The panel encourages an action-reaction experience necessary for the understanding of system dynamics. Because the system has the ability to go from cold shutdown to 100% power, students experience start-ups and shutdowns as they happen in an actual plant.

Initialization/Snapshots

The simulator can be initialized to any of 21 protected conditions. These Initial Conditions provide the capability of starting an exercise from a known plant operating condition. The simulator can also be initialized from a Snapshot, developed by an instructor in support of the training exercise. Up to 10 snapshots are available on the system.

Graphic Display System

Through the use of the Graphics Display System, the simulator's capabilities as a learning device are generally enhanced. The displays are organized by the instructor using the graphics development keyboard and are selected by the student through use of a functional keypad.

The ability of the graphics system to display any variable in the simulation data-base provides for correlations to be made that up to now could only be manually plotted or mentally pictured. Parameters such as void fraction, reactivity, xenon, and enthalpy are available for demonstrating and understanding how the process works. Because of the flexibility of the graphic displays, the BPTS can support a good deal more training than would be possible by use of just the mimic panel and miniaturized meters.

Backtrack/Replay

The simulator automatically records the status of the plant for the last 30 minutes of operation at half minute intervals. Through the use of Backtrack, the simulator can be

reinitialized to any of the previous points and simulation resumed. The Replay function is similar to Backtrack with the exception that the simulator "replays" the simulation from the selected point instead of initializing at that point. Thus, the Replay function is used to demonstrate any portion of the last 15 minutes of operation on the panel.

Thermal Hydraulics on the BPTS

The BPTS can be used in a number of schemes to demonstrate the basic principles of systems operation and processes to enhance the trainee's knowledge of power plant application with a nuclear steam supply system.

Training can be focused on integrated response or individual system or process models for in-depth studies to reinforce concepts and applications. In fact peripheral system models can be placed in a "freeze" state to enable exact control of model interface and enable observance of single parameters without feedback effects from boundary systems.

Through the use of Historical Data Collection up to 96 database parameters (assignable by the instructor) can be recorded for off-line study and analysis. For example, one could record reactor coolant system temperatures, flows, enthalpies, and other related parameters to develop a heat balance calculation for the system.

7-10. Describe what GPU considers satisfactory performance in the simulator portion of its replacement operator training program, and describe the system of grading operator's performance on the simulator, including all guidelines for grading an operator's performance.

ANSWER.

7-10. An examination is conducted at the completion of the replacement operator simulator training program. The candidate is required to demonstrate abilities outlined in Appendix C to the Replacement Operator Training Program Description.

7-11. GPU has provided copies of drafts of the Special Report of the Reconstituted OARP Committee Special Report under cover pages that state "Memo - Richard P. Coe, J. Duncan 9/7/84, Rev. 1 Uhrig Report." Please provide the following information with respect to these documents:

a. Who is J. Duncan, what were his/her responsibilities, and what actions did he/she take with respect to the Special Report?

b. Why do the memoranda that accompany these drafts refer to J. Duncan?

c. Who wrote each of the handwritten notations on each of the documents, Rev. 0 and Rev. 1 of the "Uhrig Report?"

ANSWER.

7-11 a. John Duncan is an administrative assistant who is assigned to the Training & Education Department. He took no actions with respect to the Special Report.

b. The memoranda in question refer to J. Duncan because when they were produced in response to intervenors' discovery requests, they were forwarded from Dr. Coe to Mr. Duncan for transmittal to the discovery reading room.

c. The Reconstituted OARP Committee.

7-12. Identify every individual who drafted all or part of the conclusion to the Special Report. For each individual, identify the part of the conclusion to the Special Report that he/she drafted.

ANSWER.

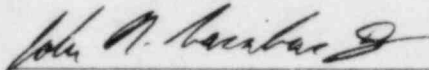
7-12. See response to UCS Interrogatory 2-9.

7-13. Identify every individual who reviewed any draft of the conclusion to the Special Report. For each individual, identify the changes suggested by that individual and the changes made to the conclusion as a result of or consistent with his/her review.

ANSWER.

7-13. See response to UCS Interrogatory 2-8.

Respectfully submitted,



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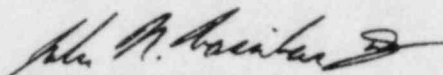
Dated: October 29, 1984

CERTIFICATE OF SERVICE

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I hereby certify that copies of "Licensee's Answers to Union of Concerned Scientists' Seventh Set of Interrogatories to General Public Utilities" were served this 29th day of October, 1984, by deposit in the U.S. mail, first class, postage prepaid, to the parties on the attached Service List.

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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