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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 Remand)
(Three Mile Island Nuclear)	
Station, Unit No. 1))	

REBUTTAL TESTIMONY OF THE
RECONSTITUTED OARP COMMITTEE

Q.1. Has the Committee reviewed the "Testimony of Julius J. Persensky, Joseph J. Buzy and Dolores S. Morisseau on the Remanded Training Issue from ALAB-772"?

A.1. Yes.

Q.2. What is the Committee's view of that testimony?

A.2. The Committee believes the testimony is based to a significant extent on a lack of understanding of what the Committee has done, as well as what the Committee intended to do in reviewing Licensee's TMI-1 licensed operator training program. The Committee considered it unproductive to expend time over the last four months describing its activities in detail in a report or in testimony, preferring instead to spend its time reviewing licensed operator training at TMI. However, at this juncture, in order to clarify the record, the Committee considers it necessary to respond to the Staff's testimony.

Q.3. The Staff witnesses identify in their testimony (A.15) a list of documents they believe the Committee should have reviewed "as background" in order to evaluate the licensed operator training program. Do you agree with this belief?

A.3. Generally, yes.

Q.4. Were these documents reviewed by the Committee?

A.4. For the most part. All but three of these documents (NUREG-0680 (June 1980), Supp. 1 (Nov. 1980) and Supp. 2 (March 1981)) were reviewed as background material, along with other documents, by one or more Committee members.

Q.5. Why didn't the Committee refer to all of these documents in its prefiled testimony?

A.5. Some of these documents were not referred to in the Committee's testimony precisely because they were reviewed as background material. The documents were used for orientation purposes. They were not relied upon in the sense of being the basis for the Committee's conclusions, as reflected in the testimony.

Q.6. The Staff states in its testimony (A.17) that the Committee's evaluation should have included (a) review of training procedures and training materials relevant to the issues in ALAB-772; (b) interviews with training managers, instructors, users and on-the-job supervisors of trainees; (c) systematic observations of classes, simulator instruction and instructors, as well as the administration of exams (written, simulator and oral); and (d) keeping in mind that the Committee

was an independent reviewer. Does the Committee agree with these four Staff views as what it would have been appropriate for the Committee to do?

A.6. The Committee believes all of these activities are appropriate. However, the Committee does not believe all of these activities were necessary in order for the Committee to evaluate the training program. Nevertheless, the Committee has had the opportunity to do most of the activities identified by the Staff.

(a) With regard to training procedures and materials, Mr. Kelly reviewed the ATOG training summary, walk-through program and procedures. Dr. Kimel reviewed the ATOG training summary and walk-through program. Dr. Kimel, Dr. Gardner and Mr. Kelly reviewed the RO and SRO initial and requalification training program descriptions. Dr. Gardner and Mr. Kelly reviewed the GPUN Instructor Development Program, the Instructor Indoctrination/Qualification Training Program, the Instructor Evaluation Procedure, the Leonard Memo (Jan. 1984) on Exam Construction, the procedures on exam control and recent RO and SRO examinations. The Committee has familiarized itself with the work of the T&E Advisory Council. The Committee also, of course, has read the testimony of Licensee's witnesses, which describe the licensed operator training program and related issues, as well as the depositions of Licensee's witnesses and Licensee's interrogatory responses on this issue.

(b) With regard to interviews of appropriate personnel, Dr. Gardner, Mr. Kelly and Dr. Christensen interviewed 5 licensed operator or simulator instructors and approximately 27 licensed RO's and SRO's and 4 replacement operators, including all six shift supervisors who are the on-the-job supervisors. All five Committee members have had significant interaction with the Vice President of Nuclear Assurance, Dr. Long, the Director of T&E, Dr. Coe, the Manager of Plant Training, TMI, Mr. Newton and the Operator Training Manager, Mr. Leonard. Mr. Kelly and Dr. Uhrig spent time with the new Supervisor, Licensed Operator Training, Mr. Maag, discussing training issues with him. The Committee met as a group with Mr. Hukill. In addition, Dr. Uhrig and Dr. Kimel met separately with Mr. Clark and with Mr. Hukill. Mr. Kelly, Dr. Gardner, Dr. Christensen and Dr. Kimel reviewed simulator training with Mr. Irizarry, Simulator Training Manager and with Mr. Boltz, Supervisor of Simulator Training at TMI. The purpose of these interviews was to gain a first-hand impression of the quality of and personnel involved in the licensed operator training program and to get all of these individuals' views about and attitude towards the program.

(c) With regard to classroom observations, the Committee endeavored to sit in on a cross-section of classes given to TMI-1 licensed operators or given by TMI-1 licensed operator instructors. Mr. Kelly and Dr. Gardner were able to observe about 15 classes for licensed operators (as well as a sample of

non-licensed operator classes) and two BPTS classes. In addition, Dr. Kimel and Dr. Christensen each observed several licensed operator classes.

Dr. Christensen went to the B&W simulator in order to observe implementation of the TMI simulator program and, particularly, the instruction given in the classroom and at the simulator to TMI-1 operators. Mr. Kelly also visited Lynchburg for this purpose. All five Committee members were briefed on and observed the use of the BPTS. In addition, Mr. Kelly observed four hours of BPTS training and four hours of demonstration of specific B&W PWR operating characteristics. In addition, Dr. Gardner, Dr. Kimel and Mr. Kelly observed the TMI-1 control board mockup while it was being used as a training device. Mr. Kelly, Dr. Christensen, and Dr. Gardner observed the administration of several exams and verified compliance with the control of exams procedure.

(d) The Committee has never lost sight of the fact that it was an independent reviewer.

Q.7. The Staff testimony (A.22 and A.23) identifies a general evaluation process for evaluating Management/Communications/Attitudes. Do you agree with this process?

A.7. Yes, although perhaps not in the formal quality assurance manner suggested by the Staff. Specifically:

(1) As background or preliminary information, the Committee has reviewed organizational documents to ascertain the structure of the organization.

(2) The Committee has reviewed communication mechanisms through interviews with training managers, personnel and operators.

(3) The Committee has determined the GPUN position on communications by reviewing management memos on the importance of this issue, referred to in the Committee's initial testimony, and by discussing these issues with Mr. Clark, Mr. Hukill, Dr. Long, Dr. Coe, Mr. Newton, Mr. Leonard, Mr. Ross, the licensed operators and the instructors.

(4) Members of the Committee have reviewed training management and staff resumes, employee performance reviews and instructor evaluations, paying particular attention to individuals highlighted by the Appeal Board and individuals in licensed operator training.

(5) Members of the Committee have reviewed documentation of the instructor development program, as well as GPUN training instructor criteria and procedures for evaluation. Instructors have been evaluated in particular by Dr. Gardner (education specialist) and Mr. Kelly (subject matter expert). Dr. Gardner and Mr. Kelly also attended portions of the most recent instructor development program and observed first-hand its structure, content and execution. During this time, Dr. Gardner and Mr. Kelly had the opportunity to obtain several instructors' views of the instructor development program. Dr. Christensen, Dr. Kimel and Mr. Kelly also observed the training of two instructors on the use of the BPTS as an instructional device.

The Committee has not performed a quality assurance check on which instructors have participated in the instructor development program; however, the Committee considers it reasonable to rely on Licensee's statement that all but one of the current TMI-1 licensed operator instructors have participated in this program.

Dr. Gardner and Mr. Kelly have reviewed instructor evaluations. As previously mentioned, a number of operators were interviewed by Committee members. The quality of instruction was discussed.

(6) The TMI training facility has been visited on a number of occasions. Committee members have observed its use.

Q.8. The Staff notes, in particular, that the RHR TMI-1 survey data and Supplement 4 to NUREG-0680 should be reviewed (A-24). Was this done?

A.8. Yes. The Committee reviewed these documents. However, the Committee did not rely on these documents in formulating its views because it felt its first-hand observations were more pertinent. It should be noted that the Committee (Mr. Kelly and Dr. Gardner) also reviewed the notes of Ms. Morisseau, which we understand form the basis for the conclusions about operator attitude in NUREG-0680, Supp. 4, and Ms. Morisseau's deposition, in which these notes were discussed. The Committee also reviewed and placed reliance on GPUN's memorandum responding to the RHR Report.

Q.9. Were classes monitored to observe attitudes communicated by instructors and students?

A.9. Yes.

Q.10. What was that attitude?

A.10. Instructors and students were serious-minded and reflected commitment to the process. Rapport and instructor/student interaction were excellent.

Q.11. Did the Committee's interviews of operators parallel the survey question format asked by RHR?

A.11. No. The Committee members did not feel it was necessary or the best alternative to follow the RHR survey format in interviewing operators.

Q.12. How did the Committee check operator pride and enthusiasm?

A.12. The Committee asked questions designed to obtain a sense of operators' pride, enthusiasm and morale, generally. The Committee also asked operators about their perception of other operators' morale.

Q.13. Was instructor professionalism, pride and enthusiasm considered by the Committee?

A.13. Yes.

Q.14. How was instructor professionalism, pride and enthusiasm considered?

A.14. The Committee reviewed instructor resumes, performance evaluations and observed most licensed operator instructors in the classroom. The Committee did not consider it

necessary to evaluate the instructors against GPUN's evaluation form. However, the GPU Nuclear criteria were taken into account.

Q.15. In their testimony (A.34), the Staff witnesses identify the methodology they consider appropriate to generally evaluate issues in the category of Training Systems/Programs. Do you agree that this approach was the appropriate approach for the Committee to use.

A.15. No.

Q.16. Why not?

A.16. The Committee endeavored to review comprehensively and assess the licensed operator training program and process in place today at TMI. The Committee did not attempt to nor could it have "validated" the program, that is, independently establish that every aspect of the program is meeting its intended purpose or is being implemented effectively. The Committee does not believe that, in seeking the opinion of the Committee, the Appeal Board intended the Committee to "validate" or do a quality assurance check on the licensed operator training program. Rather, it is the Committee's impression, in reading ALAB-772, that the Appeal Board sought the collective judgment of a group of individuals each of whom brings to this process considerable expertise in an area of relevance to the issue. The Committee also does not believe that the Appeal Board intended the Committee to perform an accreditation of the licensed operator training program, and the Committee did not

do so. The Committee is well aware of the Licensee's commitment to and current involvement in the INPO accreditation process. The Committee also is aware of the accreditation-type review of training conducted by Data Design Laboratories (DDL), which resulted in a multi-volume assessment of the status of training vis-a-vis the INPO (then applicable) accreditation guidelines. In addition, the Committee is aware of some of the numerous positive NRC Staff reviews of training conducted over the last several years reflected in reports such as NUREG-0680, Supp. 5, the SALP Report and the restart readiness evaluation (84-05). The Committee familiarized itself with these documents. However, the Committee did not consider it necessary or appropriate either to base its conclusions on these independent assessments or to engage in this type of assessment itself. Rather, relying on the individual backgrounds and experiences of each Committee member, the Reconstituted OARP Committee has provided its professional judgment of the quality of the TMI-1 licensed operator training program as requested by the Appeal Board.

Thus, in response to the Staff's testimony, the Committee is aware of but did not review the job/task analyses for TMI-1 licensed operators or compare these specific tasks to procedures, to on-the-job training or to the behavioral learning objectives utilized by the training department. The Committee has seen the job task list and various INPO documents, and has been briefed by GPUN on the status of the accreditation

process. The Committee has sampled lesson plans and hand outs for those classes members of the Committee attended. This sampling was not a quality assurance check. The Committee also has reviewed the ATOG procedures, has reviewed the process used by Licensee for on-the-job training and has observed a sample of simulator training (B&W and BPTS). There are no employee performance reviews of control room operators (CROs), and the Committee did not consider it necessary or appropriate to review shift foremen or shift supervisors' reviews.

Q.17. Does the Committee agree with the Staff's methodology for considering the issue of whether training enhances operators' knowledge or encourages memorization for test-taking purposes?

A.17. No. The Committee does not consider it necessary to do all of the activities suggested by the Staff in order to reach a judgment on this question. Mr. Kelly has extensive experience reviewing licensed operator qualifications. Dr. Gardner is an educational specialist. Neither of these individuals nor any other Committee member saw any evidence suggesting an inappropriate reliance on memorization in the TMI-1 licensed operator training program. The Committee is aware of the so-called Category T quizzes which the Committee believes were the basis for this original concern. The Committee believes current procedures, which limit repetition in test questions, and the current TMI-1 exam matrix procedure facilitate a proper mix of exam questions. Classroom instruction

attended by Committee members certainly were not drill sessions but, rather, were conducted in a discussion format designed to enhance understanding. ATOG procedures, which focus on symptoms rather than events, facilitate conceptual understanding. The BPTS is uniquely suited to teaching "basic principles," i.e., understanding the fundamentals of PWR operation. The B&W simulator is utilized to provide "hands on" PWR station experience to the operators. In summary, the Committee believes numerous indicators suggest there is not an inappropriate encouragement of memorization in lieu of enhancing operators' knowledge.

Q.18. Does the Committee agree with the Staff's methodology for assessing the training facilities?

A.18. No. Committee members have visited the TMI training facility on a number of occasions and have observed the use of a variety of equipment and facilities by the training personnel. The Committee has reviewed and observed portions of the instructor development program, which addresses the proper use of training equipment and facilities. The Committee has found no evidence of improper or inadequate use of training equipment; to the contrary, the Committee's experiences evidence a highly appropriate use of this equipment by training personnel. In particular, the use of equipment is effectively integrated into the program.

Q.19. Did the Committee use the Staff's methodology for evaluating GPUN's examinations?

A.19. No.

Q.20. Why not?

A.20. As previously indicated, the Committee did evaluate the examination process. However, the Committee did not compare the exams to the specific training behavioral learning objectives or to the TMI-1 operator task list. Instead, the Committee gained a first-hand impression of the quality of that process by familiarizing itself with the applicable procedures, (exam security, construction and grading), by reviewing representative examinations for scope, content and structure, by evaluating Licensee's simulator programs and testing process, and by gaining an understanding of the on-the-job training program and the oral exam process. In particular, the Committee noted the involvement of Operations management in the examination process. Based on this information, it is the Committee's judgment that the exam process is appropriate.

Q.21. Does the Committee have any comments on the Staff witnesses' conclusions (A.56, A.57)?

A.21. Yes. The Committee has endeavored to specify in more detail its review of training at TMI-1. The Committee collectively has expended over 190 man-days in its Committee work and considers its judgments to be well-founded. It is noteworthy that the NRC Staff considers the approach it recommends to be "similar to that employed by DDL." As previously indicated, DDL did a quality assurance check on training at TMI by correlating the program to INPO's (then applicable)

accreditation guidelines. Their work was extremely detailed in nature and is reflected in a multi-volume report. It is one of a number of studies of training at TMI conducted in the last several years. Others include SALP, NUREG-0680, Supp. 5, 84-05 and the INPO annual evaluation. The Committee did not intend to nor did it embark on this kind of a quality assurance effort, nor is its judgment based on the findings of these reports. However, the Committee believes its independent collective judgment adds to the favorable record, exemplified by these reports, on the quality of the TMI-1 licensed operator training program.

Q.22. Has the Committee read the "Testimony of D[r]. James J. Regan on behalf of the Union of Concerned Scientists" prefiled in this proceeding on November 15, 1984?

A.22. Yes.

Q.23. Does the Committee have any comments to make in response to this testimony?

A.23. Yes. The Committee would like to make a few comments about Dr. Regan's model, developed through his research activities, and its applicability to the situation at hand.

Q.24. What is the Committee's view of Dr. Regan's model?

A.24. The Committee considers Dr. Regan's model to be one (of many) methods for validating a training program, particularly when the program is being designed. The Committee

disagrees with Dr. Regan that all of the issues he raises "must be examined in evaluating a training program such as one for a nuclear power plant," or that these issues must be examined in the precise manner he describes. The Committee believes that it can make reasonable judgments about the quality of the program based on the information, documents, observations and discussions described above.

Q.25. Does the Committee believe it is necessary for a training program to document or standardize all of the information suggested by Dr. Regan?

A.25. No. Documentation and standardization can be useful. However, in a relatively small program, such as the TMI-1 licensed operator training program, where the same training managers and on-the-job managers are exposed to a limited number of trainees over a continuous period of time, these managers gain a first-hand appreciation of the weaknesses and strengths of the individual students which frequently transcends information obtained from predetermined formal questionnaires and checklists. It is therefore unnecessary and counterproductive to require these managers to spend a considerable period of their time engaged in the administrative task of documenting all of their activities and interactions with the operator-trainees, or documenting all of the trainee's activities. This regimen is to be expected in military training programs which have large student enrollments and frequent turnover. In a program such as the relatively small, stable

licensed operator training program, it has much less application.

Thus, for example, the skill and knowledge level of incoming students is usually well understood by Training and Operations managers because individuals have either nuclear Navy or auxiliary operator experience. Both of these environments are extremely familiar to management. Similarly, on-the-job performance is observed continuously, as is classroom, simulator (BPT and B&W) and test (written and oral) performance. The composite of this information, which constitutes a picture of each individual's strengths and weaknesses, is continuously reviewed by Training and Operations. Group or team performance is also evaluated. From this composite, the managers have a sound, although not necessarily standardized, basis on which to judge performance. In this process, the standard of performance method used by management includes elements of behavior to mastery, systems analysis and statistical comparisons, referred to by Dr. Regan (page 8). However, none of these methods is used exclusively, nor need it be.

Q.26. Does the Committee agree with Dr. Regan (p. 12) that Licensee's performance evaluation form ratings "are likely to be unreliable because it becomes very difficult to determine what the ratings actually mean?"

A.26. No. Dr. Gardner and Mr. Kelly have reviewed a number of these forms and consider them to contain useful performance criteria which are quite detailed and comprehensive.

Dr. Regan focuses particularly on behavioral anchors. However, the GPU Nuclear performance evaluation form is accompanied by rating definitions, which are very useful behavioral anchors. Moreover, detailed comments are provided on these forms by reviewers to indicate what the reviewer means. Also, reviewers have the opportunity to discuss their comments with other members of management with whom they regularly interact if there is an issue of concern reflected in the form.

Q.27. Finally, on pages 18 through 21 of his testimony, Dr. Regan outlines the process he would use to answer the questions raised by the Appeal Board. Do you endorse that process?

A.27. The process outlined by Dr. Regan includes references to a number of the activities in which the Committee participated over the past four months. This includes (1) reviewing training material and instruction to assess program content and administration; (2) reviewing instructor qualifications (evaluations and resumes, not mentioned by Dr. Regan); (3) observations of simulator instruction; (4) review of new (ATOG) procedures to determine how they are implemented (consideration was given to whether the training department was sensitive to learning interference problems, referred to by Dr. Regan); (5) examinative review (content and structure); (6) consideration of feedback mechanisms; and (7) assessment of attitude (management, trainers and trainees). However, with regard to some of Dr. Regan's proposals, the Committee did not

undertake nor did it consider it necessary to perform all the suggested procedures.

Q.28. Has anything in the prefiled testimony of the NRC Staff or Dr. Regan changed the Committee's "bottom-line" conclusion, expressed in its Special Report, that the licensed operator training program is adequate to support the restart of TMI-1?

A.28. No.