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NUCLEAR REGULATORY COMMISSION  
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD OF SECRETARY  
DOCKETING & SERVICE  
BRANCH

In the Matter of:

METROPOLITAN EDISON COMPANY	:	
(Three Mile Island Station,	:	Docket No. 50-289--SP
Unit No. 1)	:	(Restart Remand on
	:	Management - Training)

TMIA's PROPOSED FINDINGS OF FACT  
ON THE ISSUE OF LICENSED OPERATOR TRAINING

INTRODUCTION

On May 24, 1984, the Atomic Safety and Licensing Appeal Board issued its decision on the management phase of the TMI-1 proceedings, aimed at determining whether TMI-1 should be restarted. The Appeal Board remanded this matter for further consideration of the issue of whether "the instruction (at TMI is) adequate to prepare the operators to operate the plant safely." 19 N.R.C. at 1232. The Appeal Board stated that "the deficiencies in operator training, as manifested by the cheating episodes, may be symptomatic of more extensive failures in the licensee's overall training program." ALAB-772 at 63.

Finding that the record in the reopened proceeding "raised more questions than it has answered satisfactorily, ALAB-772 at 63,

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the Appeal Board determined that it was necessary to reopen the record to receive additional testimony from Licensee's consultants who had reviewed Licensee's training program in 1980, and testified on its behalf.

Upon review of this record, this Board cannot conclude that Licensee's training program is adequate to prepare the operators to operate the plant without endangering the safety of the public. It is abundantly clear that the serious attitudinal and morale problems revealed during the reopened hearings, have not been adequately resolved, and that these problems undermine the operators' ability to run the plant safely.

Furthermore, even the most technically proficient training program (which does not appear to exist here) could not overcome the problems that continue to create poor operator attitude.

The Appeal Board raised the following questions:

1. Does the training program actually enhance the operator's knowledge or simply encourage memorization for test-taking purposes?
2. Are the Licensee and NRC examinations an effective way to measure an operator's ability to run the plant?
3. Do the format and content of the examinations encourage cheating?
4. How do the OARP Review Committee and the other consultants assess the cheating incidents and Licensee's subsequent changes in its training and testing programs?
5. Are the future audits of the training program sufficient as a quality assurance check?

6. Are the candidates well trained to operate the plant?
7. How would the OARP Review Committee strike the balance between the positive and negative aspects of the retraining program?
8. Would the OARP Review Committee require even greater usage of simulators in training and testing?
9. Do the post-cheating changes in the training program adequately ameliorate the "lack of communication between top management and the operating crews"? 19 N.R.C. at 1,232-37.

## THE COMMITTEE REPORT

The Committee failed to answer the basic question, is the cheating and related events symptomatic of a deeper problem.

1. When first contacted by GPUN management in late May 1984, the Reconstituted OARP Committee was told they were to prepare a report for the Commissioners' consideration at the then scheduled June 27, 1984 meeting, to decide restart, and in response to the Appeal Board remand. Tr. 31,790-791 (Uhrig); Special Report at 3.

2. The Committee came together to consider the issues for the first time May 30-June 1, 1984, at TMI. Dr. Kimel was not present at that initial meeting. Tr. 31,789 (Uhrig) (Kimel). None of the Committee members had received any substantive information concerning the training at TMI-1 since the completion of their review which formed the basis of the 1980 OARP Report. Tr. 31,792 (Uhrig). The Committee was briefed by GPUN management and supplied with documents. Tr. 31,793 (Uhrig).

3. The first rough draft of the Special Report, purporting to address the complex and significant issues raised by the Appeal Board, was completed the evening of June 8, 1984, little more than a week after the initial meeting. Tr. 31,805-806 (Uhrig).

4. The Committee learned on June 8 that the Commission meeting had been delayed and the deadline for submitting the report to the Commission was extended by two weeks. They worked on the report, with Committee members contacting each other by phone to make changes. The Special Report issued on June 27, 1984. Tr. 31,808.

5. In preparing the report, the Committee did not review any written or oral examinations. Tr. 31,814. They did not review

training program curricula, emergency procedures or the RHR Report, nor had they observed any simulator training. Tr. 31,815-816.

6. The Committee did not check the accuracy of the program against the design of the plant. Tr. 31,817. No Committee member evaluated the consistency of examination questions and answer keys. Tr. 31,826 (Uhrig).

7. They did not review any of the individuals implicated in the cheating and related incidents. Tr. 21,915-916 (Uhrig). In fact, the Committee did not interview any licensed operators prior to the issuance of the Special Report. Tr. 31,818. They did not interview the manager of operations of TMI-1, Michael Ross. Tr. 31,138.

8. The Committee did no evaluations of instructors, Tr. 31,825 (Uhrig), and did not learn that Edward Frederick, then Supervisor of Licensed Operator Training at TMI, had failed a 1984 NRC senior reactor operator licensing examination, until the issue was raised when Uhrig was being deposed on October 23, 1984. Tr. 31,958.

9. The Committee admits that its report was not independently verified, and at the hearing Uhrig stated: "We recognized that the Special Report was based exclusively -- well, not exclusively but certainly to a large extent, on material provided to us by GPU management." Tr. 32,104 (Uhrig).

10. A report which purports to review a program, and relies solely on management of that program for information is obviously not a credible report.

11. Although they felt the Special Report adequately addressed the issues raised in ALAB-772, Tr. 31,973 (Uhrig), the Committee met once again on August 14, 1984. It was then that they learned they would be required to testify in this proceeding. Tr. 32,102 (Uhrig). Since the Special Report had been hastily prepared primarily for the Commission's June 27 meeting dealing with restart of TMI-1, Id., and was based almost exclusively on information provided by GPUN management, the Committee realized they needed more information "in order to buttress our qualification to speak with authority at this hearing." Tr. 32,104 (Uhrig).

12. The Committee attended training both at the simulator in Lynchburg and in the TMI training center. Tr. 31,905 (Christensen); 31,906 (Kimel); 31,910 (Kelly).

13. Kelly observed classes for instructors, and although he had with him the instructor evaluation sheet used by GPU, he did not fill it out. Tr. 31,913 (Kelly). Staff witnesses testified that random observations of instructor performance, as done by OARP, does not provide reliable results; observations over time are needed to observe the consistency of instructor performance. Tr. 33,157 (Morisseau).

14. Kelly also interviewed instructors and operators, Tr. 31,914, 31,842 (Kelly), but these interviews were unstructured and there was no way to assure that the same, and all questions were asked of each interviewee. Staff witness Morisseau testified that structured interviews are essential in ensuring accurate

results. She said in order for data to be reliable, one should keep some kind of written record. Tr. 33,163 (Morisseau). Staff witnesses said that other than "in a group interview where there is an intent to have some crosstalk between management and interviewees," management should never sit in on an interview. Tr. 33,161 (Persensky).

15. The Committee did not check the accuracy of the training program against the design of the reactor, Tr. 31,817; or review job task analyses to compare them with current training curricula. Tr. 31,950 (Gardner, Kelly). They made no effort to determine if the training might have contributed to the 1981 cheating incident. Tr. 31,924 (Uhrig). Furthermore, the Committee relied upon their 1980 evaluation of program content in reaching their favorable conclusions on the current training program. Tr. 31,943 (Uhrig).

16. Subsequent to the issuance of the Special Report, Kelly interviewed approximately fifteen to twenty licensed operators to determine their attitude toward training. At times, Kelly was assisted by Christensen or Gardner. Sometimes he conducted the interviews alone. Tr. 31,839 (Kelly).

17. No member of the Committee attempted to obtain anonymous written responses from the operators concerning their attitude. Tr. 31,850. Gardner and Kimel jointly interviewed two operators; during one of those interviews Ross, Manager of Operations, was present. Tr. 31,857.

18. Gardner interviewed operators after having read the RHR Report, but asked no questions specifically related to that report, Tr. 31,850 (Gardner), therefore he could not determine if the attitudes reflected in that report had changed.

19. No member of the Committee is expert on the subject of cheating, Tr. 32,032, they did not interview any of the operators who were involved in the cheating and made no attempt to determine the cause of any specific incident of cheating, Tr. 31,915-916 (Uhrig); yet they concluded that the cheating was "highly situational and individual," ff. Tr. 31,749 at 5, ignoring the Appeal Board's observation that the cheating and related incidents involved "one-fourth of those who took the April 1981 NRC examinations." ALAB-772 at 64. The Committee also chose to ignore the Appeal Board's concern that the cheating "may be symptomatic of more extensive failures in Licensee's overall training program," ALAB-772 at 63, focusing instead on the current licensed operator program. The Committee said they did not evaluate the cheating as it related to the training but looked at what steps had been taken to assure that cheating would not recur. Tr. 31,926 (Uhrig). Of course, it is not possible to evaluate whether cheating is likely to recur in the future unless you have first identified the root cause of the cheating. Both the Committee and GPU management failed to take this important step, therefore there is no assurance that it will not recur, either within the training department or in some other equally important area of plant operation.



THE APPROPRIATENESS OF PROMOTIONS

Long

20. Dr. Robert Long assumed the position Director, Training and Education, in February 1980, and was responsible for coordinating all training associated with GPUN facilities. ff. Tr. 33,326 at 1.

21. Long appeared before this Board in 1981 and assured us that examinations would no longer be administered in the open-book format. We later discovered that despite these assurances, Long had made no effort to ensure that there was actual implementation of the procedure prohibiting open-book examinations. PID ¶2323.

22. In his prefiled testimony in this proceeding, Long stated that in 1981, the training department staff was justified in their belief that trainees knew one was expected to do one's own work on an examination. ff. Tr. 32,202 at 3. This testimony is not credible; VV, at least did not recognize that he was expected to do his own work. PID ¶2274. Both the training staff and Licensee management were aware of VV's attitude. Tr. 32,281 (Long). Long cannot now claim naivete.

23. The record of the reopened hearing demonstrates that despite the VV incident, and their awareness of it, training department personnel made no attempt to caution other trainees that such behavior was unacceptable. Nor did they take precautions to guard against future cheating, in fact, as noted above, the practice of administering examinations in the open-book format continued and the training department continued to send out make-up packages.

24. Although members of his staff were aware of the incident, as were site management personnel, Long asserted that he was unaware of the 1979 cheating incident, since it occurred prior to his assuming the Directorship of the training department. Given the special attention focused on training after the accident, we would have expected Long to be acutely aware of any problems at TMI which concerned the training department.

25. At the hearing, Dr. Kimel said that he was impressed with Long's interest in developing a training program based on behavioral learning objectives. Tr. 33,330 (Kimel). Kimel said that Long began utilizing this method of training immediately after he assumed the directorship of the program. He said that this was one of the reasons for Long's promotion. Tr. 33,326 (Kimel).

26. Kimel has failed to recognize that Long's behavioral learning method was ineffective as evidenced by the cheating of April 1981, and by the operators' attitude toward their training.

27. It is obvious from the discussion above, that Long's promotion to the key position of Vice President, Quality Assurance was ill-advised and inappropriate. As Director of Training and Education, Long was so out of touch with the actual training for which he had responsibility that he was unaware that a procedure which he purportedly put in place in response to an NRC directive was not being implemented in actuality.

28. Long's testimony concerning the training department's knowledge of the need for examination security was not credible.

And the training program he instituted in 1980, in response to the various post-accident criticisms, not only failed to adequately address those criticisms, but contributed to the April 1981 cheating incident.

29. Long's promotion is indicative of gross misjudgment on the part of management.

#### Frederick

30. The numerous investigations which followed in the wake of the accident identified inappropriate operator action in the very early stages, as one of the primary causes of the severity of the accident. This in turn was linked to inadequate operator training.

31. Edward J. Frederick was one of the two CRO's on shift when the accident began. In July 1979, he transferred to the training department as an instructor, and advanced steadily through the ranks, until he assumed the position of Supervisor, Licensed Operator Training in 1983. ff. Tr. 32,202 at 13 (Long).

32. The decision to allow Frederick to instruct other operators was, to say the least, an incredibly poor one. It simply makes no sense to have an individual with a demonstrated lack of technical knowledge, train others to operate the plant. Additionally, the operators resented Frederick's placement as instructor; they referred to him as a "know-it-all." ff. Tr. 32,202 at 14 (Long). However, the training department was seemingly unaware of Frederick's attitude problem; it is not noted in any of the evaluations. UCS Exhs. 2-5.

33. In March of 1984, Frederick failed both the written and oral portions of an NRC-administered SRO examination. Long has attributed these failures to the fact that Frederick had had insufficient time in the plant to learn TMI-1 procedures. ff. Tr. 32,202 at 14-15 (Long). This is not a credible explanation when one considers that Frederick has been employed at TMI-1 since July 1979.

Newton

34. At the time of the cheating incident, Samuel L. Newton was responsible for supervision of the licensed operator training instructors. ff. Tr. 32,202 at 33. However, he either failed to detect the attitude problems of Husted and Frederick, or else he simply chose to ignore them.

35. Furthermore, Newton was responsible for ensuring that the "closed book" procedure promised by Long was actually implemented.

36. Long cites the Reconstituted OARP Committee endorsement of Newton, in support of Newton's promotion. However, the OARP Committee did not review Newton's job responsibilities for the period in which the cheating occurred. Tr. 32,012-013. They are not in a position to determine if Newton was derelict in his responsibilities and therefore, not able to form a valid conclusion as to the appropriateness of Newton's promotion.

Husted

37. In our decision and based on the evidence in the record on the reopened hearing, we found that Charles Husted had failed to cooperate during an NRC investigation. We imposed no direct sanction on Husted but recommended that he be closely evaluated during the review of the training program. PID ¶2168. By stipulation with the Commonwealth of Pennsylvania, GPU agreed not to utilize Husted to operate TMI-1 or to train operating license holders or trainees. ALAB-772 at 42. Husted was subsequently promoted to Supervisor, Non-Licensed Operator Training. ff. Tr. 32,202 at 18.

38. The Appeal Board questions "Licensee's judgment in promoting Husted to an important position with management responsibilities," and has imposed as an additional condition, "that Husted have no supervisory responsibilities insofar as the training of non-licensed personnel. ALAB-772 at 46. Husted was removed from the Supervisor, Non-Licensed Training position in June 1984, in response to the direction of the Appeal Board. Id.

39. From this sequence of events it is obvious that GPU management is incapable of taking action to resolve serious and obvious problems unless forced to do so by an outside agent. This is totally unacceptable, in a large self-policed industry, the public must have confidence that management will take any steps necessary to ensure the safety of the plant.

## ATTITUDE AND MORALE

40. During the reopened hearings it became evident that operators had a poor attitude, they felt that the training they received did not prepare them adequately to take and pass the NRC examination, Tr. 24,022 (Hukill), and had little relationship to their ability to operate the plant. Operators testified that in their opinion poor training was responsible for the cheating incidents. Tr. 26,543 (I), 26,404 (Shipman). Others had a disrespectful attitude toward training at TMI (VV, O, W). Management had been aware of these attitudes since the accident. Tr. 32,289 (Long).

41. In 1981, GPU management issued a bonus to its operators in an effort to raise morale. Tr. 23,961 (Hukill). However, the resentment toward management continued. UCS Exh. 6. Licensee now assures us that this problem has been resolved and operators now have a positive attitude toward training; this opinion is based to a large extent on the fact that there have been no resignations of operators for several years.

42. However, in discussing the currently anticipated bonus, Ross stated that it will be paid only after restart to those operators who have maintained their license. Tr. 33,467 (Ross). This fact undermines the assertion that operators are staying at TMI-1 because they are enthusaistic about the program.

43. The Committee found that operators had a good attitude. However, given the unreliability of their prior testimony on this issue, we are reluctant to accept their current testimony.

44. The Committee discussed at length the importance of the operator; Uhrig said that an operator could bankrupt a utility, Tr. 32,106 (Uhrig), and felt that management should always be concerned about the morale and attitude of its personnel. Tr. 32,166 (Uhrig).

45. Kelly testified in prefiled testimony before this Board in 1981, that he was particularly impressed by the enthusiastic attitude toward their training. ff. Tr. 12,409 at 4. Gardner testified that in preparation for the 1980 OARP Report, he interviewed operators and detected no poor attitude. And while he had found some resentment on the part of operators and instructors at having to be relicensed, their attitude was good in his judgment. Tr. 32,168 (Gardner).

46. It is not surprising that neither Kelly nor Gardner were able to detect these poor attitudes when they interviewed operators in 1980. Both Kelly and Gardner described the interview techniques which they employed in their most recent (1984) round of interviews, the method was unstructured and informal. Tr. 32,106, 32,150-151, 32,155. Staff witness Morisseau testified that reliable interview results could only be obtained if the interviews were structured and consistent. Morisseau said that written notes should be taken. Tr. 33,163 (Morisseau). Dr. James J. Regan testified on behalf of UCS. He said that one should sample attitudes over time, and that the surveys were extremely sensitive to the wording of the questions. Tr. 32,822 (Regan).

47. In addition to the inadequate operator interviews, the Committee based their opinion of operator attitude upon briefings from GPU management, who indicated high morale.

## COMMUNICATION

48. The cheating and related incidents emphasized the fact that management was completely out of touch with its employees. Subsequently GPU has established various mechanisms, one of which the Management Interface Meeting, asserts to provide an opportunity for communication between management and employees as well as a forum in which operators can express job-related concerns. Tr. 31,977 (Kimel).

49. The OARP Committee testified that they were pleased with the way that the communications between management and employees was working. However, they relied on management for this information. Tr. 31,957. They did not attend any of these meetings nor did they review any documentation of the meetings. Tr. 31,975-995.

50. A memorandum discussing an incident during an employer/management meeting, indicates that Mr. Hukill, Director of Operations TMI-1, discouraged an employee from raising safety concerns. Tr. 31,993 (Smith, Uhrig). In actuality, TMI employees are not encouraged to express their job-related concerns.

51. Additionally, management has not explained to the operators, their decision not to recertify Frederick. This action on the part of management was partially in response to questions raised in NUREG 0680 Supp. 5, (UCS Exh. 1), and as a result, Frederick was removed from his position as Supervisor, Licensed Operator Training. Tr. 33,485 (Ross). Instructors from the licensed operator training department were informed, and they felt that the action was "unfair." Tr. 33,490 (Ross).

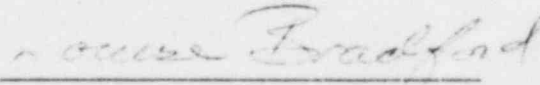


52. The Committee's report was hastily prepared and was based primarily upon information provided by Licensee. Their later review of the training program sought only that information which would support the Special Report. The interviews they conducted were unstructured and informal, and did not probe the effectiveness of Licensee's response to the cheating.

CONCLUSION

Licensee has not adequately responded to the questions raised by the Appeal Board.

Respectfully submitted,

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Louise Bradford  
Three Mile Island Alert

Dated: February 26, 1985

February 26, 1985

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

OFFICE OF SECRETARY  
DOCKETING & SERVICE  
BRANCH

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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

CERTIFICATE OF SERVICE

This is to certify that copies of "TMIA's Proposed Findings of Fact on the Issue of Licensed Operator Training" were served by hand delivery on this 26th day of February, 1985, to all those on the attached Service List indicated by an asterisk (\*), and all others by deposit in the U. S. Mail.

Louise Bradford  
Louise Bradford

DATED: February 26, 1985

Before the Commission

In the Matter of:

METROPOLITAN EDISON COMPANY,	)	
	)	Docket No. 50-289
(Three Mile Island Nuclear	)	(Restart)
Station, Unit No. 1)	)	

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