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

LICENSEE'S TESTIMONY OF

JOHN F. WILSON

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BY WITNESS WILSON

I. Nature and Purpose of Testimony

My name is John F. Wilson, and I am an attorney with the law firm of Debevoise & Liberman. I am here today to testify on behalf of Metropolitan Edison Company ("Licensee") which I have served as legal counsel since 1968.

This testimony demonstrates that since Licensee was made aware of cheating on the April, 1981 NRC examination, I have undertaken, at the request of Licensee, a review of Licensee-administered qualification testing for potential cheating incidents. The scope of this review included contracting with an independent consultant to analyze several sets of exams, investigating strong parallelisms identified by the consultant, investigating rumors of cheating and interviewing numerous Licensee personnel. In those identified instances of strong parallelisms, all but a few reasonably have been explained on some basis other than cheating after a review of lesson material and sequence of test administration, all of which was corroborated by interviews of the examinees. In the very few other instances, no such lesson material or test sequence logic was apparent, but the individuals specifically denied cheating to arrive at their answers. Regarding the investigation of rumors of cheating, I have found no evidence, other than what has been reported to date, which would support the rumors. Finally, I have cooperated with the NRC inspectors

in their independent investigation of cheating by arranging to make individuals available at the requested times and providing copies of Licensee's documents to the NRC.

II. Qualifications and Experience

I received my law degree from Villanova University School of Law in 1967 and after gaining admittance to the Pennsylvania bar in the same year, joined the law firm of Stevens and Lee as an associate. I remained with that firm until May, 1968 when I joined Metropolitan Edison Company as a staff attorney.

From 1968 through June, 1973, I was involved in numerous activities including dealings with the Pennsylvania Public Utilities Commission and numerous federal agencies including the NRC and the Federal Energy Regulatory Commission. I also prepared contracts, did legal research and conducted discovery for litigation and worked on insurance coverage claims. In July, 1973, I was promoted to Assistant Staff Counsel for Metropolitan Edison Company and continued working on the same varied types of matters. After the accident at TMI-2, I spent virtually all of my time on accident-related matters, including insurance and public liability issues and responses to the investigation by the President's Commission on the accident and various other inquiries into the accident.

In 1980, I joined the law firm of Debevoise and Liberman as an associate but continued to work exclusively on

GPU System matters. Since July 27, 1981, when the NRC informed Licensee of suspected cheating, I have spent virtually all my time on activities related to this matter.

III. Discovery And Investigation of Potential Cheating Incidents

As a result of the need to determine if there was further cheating beyond that disclosed by the NRC's investigations, Licensee contracted on August 29, 1981 with Mr. Edward V. Trunk, Assistant Professor of Engineering at the Pennsylvania State University, Capitol Campus. I made contact with Mr. Trunk on behalf of Licensee and requested that he perform an independent comparison of several sets of exams to determine if incidents of cheating were evident. Mr. Trunk was also asked to report the results of his work in writing.

Specifically, on August 29, 1981, Mr. Trunk was asked to analyze the Kelly exams (both Category T and non-Category T) and the Category T make-up exams. He promptly began work with the assistance of a colleague, Mr. Donald L. Miller, and his Report was issued on September 2, 1981. During the week of September 14, 1981, I again telephoned Mr. Trunk on behalf of Licensee and asked him to perform the same type of independent analysis regarding some of the ATTS mock exams given in April, 1981. The work was performed and a second Report was issued on September 21, 1981. A third Report following up on the parallelisms noted in the September 2, 1981 Report was issued on October 1, 1981. Finally, during the week of October 5,

1981, I asked Mr. Trunk once again on behalf of Licensee to review non-Category T make-up exams, various other review tests and quizzes and the March, 1979 mock NRC exam. A fourth Report was issued on October 14, 1981. Mr. Trunk's investigations are discussed in greater detail in separate testimony entitled "Licensee's Testimony of Edward V. Trunk" ("Trunk Testimony").

In Mr. Trunk's Reports dated September 2 and 21, and October 14, 1981, he documented several instances of parallelisms. I promptly investigated all of these incidents with the assistance of a colleague of mine from Debevoise and Liberman, Richard D. Lloyd.

A. G and H

One series of parallelisms appeared on three sets of Category T make-up exams and one set of non-Category T make-ups submitted by G and H, two reactor operators at TMI-1. These individuals failed two Category T make-ups taken on November 26, 1980 and March 27, 1981 (take-home exam) but passed the third make-up on June 25, 1981.

G and H were interviewed separately by Mr. Lloyd and myself on September 11, 1981. They did not have an opportunity to discuss the matter prior to the interviews. W. Zewe, a Shift Supervisor, was present at these interviews at the request of each individual. Mr. Zewe generally was silent during the questioning and only spoke after the interviewees had responded to a question. His comments were supportive of

the interviewees' explanations and were offered in an attempt to understand the basis for the similarities in the exam answers or to inquire about Licensee's investigative efforts. His presence did not appear to affect in any way the objectivity of the interviews. On the contrary, his presence was helpful.

During the interviews, G and H were each shown their own answers as compared with the same answers on the other operator's exam and asked to explain the similarities. Although sometimes unable to explain similarities, both G and H emphatically denied cheating on any of the Category T make-ups and denied cooperating on the take-home exam. Because the answers at issue generally were short -- sometimes only a few words -- both G and H attributed many of the similarities to memorization of training materials. In addition, some answers submitted were the result of error and others were based on their own logical ordering of information presented in class in a different sequence. These explanations were bolstered by Mr. Lloyd's and my review of the training materials and discussions with instructors.

On the first make-up exam, for example, ATOG Question No. 3 stated: "List the four (4) requirements for natural circulation." H's response read:

"Heat source available to produce warm water.
Heat sink available to produce cold water.
Connecting Flow Path Available.
Cold water above warm water."

G's response read:

"Heat source available to produce warm water.
Heat sink available to produce cold water.
Connecting flow path available.
Cold water higher than warm water."

Both G and H stated in their interviews that the answer to this question was susceptible to memorization and that they had indeed memorized the handout used to teach this subject. Mr. Lloyd and I found it reasonable to believe this explanation because H's response was identical to the teaching material and G's response merely substituted the words "higher than" for "above" in the last line. This belief was supported further by the fact that two other operators, whom I will discuss in a moment, responded in a virtually identical manner on a different exam. Thus, there was no basis for disbelieving G's and H's denials that they had collaborated on this answer.

One question appearing on both the November 26, 1980 classroom exam and the March 27, 1981 take-home exam read: "Discuss how hydrogen gas is generated in the reactor coolant system and reactor building following a LOCA." On the first make-up, both G and H gave a partially correct answer "From aluminum, Zirc (or Zr) water reaction." The complete answer, in addition to aluminum, required that the compound NaOH be included, which compound the instructor wrote just above each of the answers when grading the exams. On the March, 1981 take-home exams, both G and H included the compound NaOH but failed to include aluminum.

In the interviews, G and H indicated that the instructor's correction was unclear and that they both had understood NaOH to be a substitution for and not an addition to aluminum. Neither G nor H could explain the similarity of their initial error of showing only aluminum and not including NaOH, but Mr. Lloyd and I had no basis for disbelieving G's and H's denials that they had collaborated on this answer.

On the take-home exam in March, 1981, Question No. 1 in the ESAS section read: "List the process lines which are isolated on a reactor trip." Both G and H listed the same ten items in the same order and used the same format. However, in addition to the fact that H included several explanatory words in his list which G did not show, both G and H explained that they had listed the items in a logical sequence beginning with what they considered to be the most important. C. Husted, an instructor in the Training Department, and W. Zewe who was present during the interviews, commented that the order used by G and H was indeed logical and that with one exception, according to Mr. Husted, the order was based on a sequence of descending importance. Again, no basis existed for disbelieving the operators' denials of cheating.

Finally, on October 29, 1981, Mr. Lloyd and I interviewed G and H separately relative to the parallelisms noted in their non-Category T make-up quiz. Mr. T. Peters, local union president, was present at the request of the individuals. While we could not find any lesson material which

was supportive of their responses, both G and H emphatically denied cheating or being aware that anyone might have copied from them. They did feel that their responses were items which they would have memorized, either from a common answer which they may have prepared in preparation for the quiz or from language placed on the blackboard by the instructor. They could not be certain, however, because the exam was taken nearly a year prior to the interview and was one of many exams given during the training sessions which they had attended during that period. Mr. Lloyd and I found no reason to disbelieve their denials.

Generally, regarding the parallelisms between G and H, Mr. Lloyd and I believe that the coincidence of response wording must be viewed with the understanding that the third-round Category T make-up quiz was strictly proctored, and we believe no cheating took place in that session even though Mr. Trunk found parallelisms in that quiz. Further, we believe that G and H did not cheat by cooperative effort in the second-round Category T make-up because had they cooperated, we reason, the results of their tests would have been different -- they would have passed. In addition, had they cooperated, we would have expected to see significantly more similarities in that quiz. Since Mr. Trunk noted parallelisms in this quiz as well, Mr. Lloyd and I question whether the parallelisms noted in the first-round Category T make-up and the non-Category T make-up are not more representative of a similarity in approach to taking quizzes; namely memorization. When we consider their

denial in light of the foregoing, we find it less likely that they cooperated than that they memorized.

3. S and Y

A second instance of parallelisms noted by Mr. Trunk involved two virtually identical answers submitted by S and Y on a Category T make-up exam given on December 19, 1980. Both S and Y previously had passed the Category T portion of the April, 1980 Kelly exam so their taking this exam was merely part of their regular weekly training program.

The first answer at issue was the same "natural circulation" answer previously described with respect to G and H, and Mr. Lloyd and I again found no reason to disbelieve the operator's denial of cheating. The second answer was in response to ATOG Question No. 1 which read: "Describe how the ATOG program proposes to simplify the operator's problem of identifying and reacting to (treating) abnormal transients". Both S and Y answered, "By developing symptom oriented guidelines".

Mr. Lloyd and I proceeded to interview S on September 14, 1981. Mr. H. Hukill, Director of TMI-1, was present during the interview at the request of S. Y was not available for an interview due to a leave of absence. Y just recently has returned to TMI-1 but has not been interviewed because the apparent reason for the parallelism -- memorization of a lesson plan -- appears controlling, as in the case of G and H.

In his interview, S denied cheating on the Category T exam, indicated that he knew Y but never studied with him and stated that he never intentionally sat next to him during any exam or quiz. S suggested that the similarity between his responses and Y's was due to memorization of the teaching materials. His explanation was supported by the lesson handout which included the phrase "Develop symptom oriented guidelines," and which S remembered when it was shown to him during the interview. Also, although not necessarily known to S and Y, it was obvious that the Training Department was looking for the buzz words "symptom oriented guidelines" because these words were noted several times by the graders of the marked quizzes. Therefore, it appeared to us that the graders, who were also the instructors, probably used the same words during training in this area. Based on this information, Messrs. Lloyd and I found no reason to disbelieve the denials of cheating by S. Mr. Trunk concurred with this conclusion in his Report dated October 1, 1981, which is described in the Trunk Testimony.

C. MM, GG and W

A third instance of parallelisms noted by Mr. Trunk involved two answers on the December 19, 1980 Category T make-up exams submitted by MM, GG and W. The first question for which similar answers were submitted read: "List two (2) major areas of weakness noted by lessons learned taks (sic) force". MM responded:

"Non safety related systems affecting safety systems operator action compounding the challenges to safety systems."

Both W and GG responded in an identical manner:

"Non safety related systems affecting safety related systems (challenges the system) and operator action which compounded the challenges to the safety system."

The second relevant question read: "The most important lesson learned fell into the general area of operational safety. What was the primary deficiency in this area?" MM responded:

"operations training inadequate," whereas both W and GG again responded in a virtually identical manner:

"Operator (GG used the term "operations") training allowing action which challenged the automatic actions of the safety related systems".

Upon further review of the first set of answers, Mr. Lloyd and I concluded that although MM's answer expressed the same ideas as the other two answers, MM's language was sufficiently different to suggest that there was no apparent cheating. MM's second answer was even more different from the other two answers, again suggesting that MM was not in fact involved in a cooperative effort with either W or GG. However, because Mr. Trunk did not remove MM from his list of parallelisms until a later date, we interviewed MM on September 15, 1981, and MM denied any cheating.

The other two sets of answers were so similar that without an acceptable explanation from W and GG, cheating

appeared to be the only possible explanation. Mr. Lloyd and I therefore interviewed GG on September 3, 1981, and asked him about the similarities between his answers and those of W. GG insisted that he had not looked at W's exam nor had he allowed W to look at his. GG did admit, however, that W may have looked at his (GG's) exam without his (GG's) knowing.

Because W is one of the two operators who confessed to cheating on the April, 1981 NRC examination, he was no longer employed at TMI-1 at the time of GG's interview and Mr. Lloyd and I did not interview him concerning this matter. However, based upon the interview with GG, there was no reason to disbelieve GG's denial.

D. BB and Answer Key

A fourth incident of parallelisms noted by Mr. Trunk concerned BB and his response to two questions on the ATTS mock SRO exam given on April 2, 1980. BB's answers, including a graph, were found by Mr. Trunk to be identical to the answer key. As part of our investigation of this matter, Mr. Lloyd and I interviewed BB on September 22, 1981. Sam Newton, head of TMI-1 Licensed Operating Training, was also present at the request of BB.

When BB was shown the answer key and his answers, he realized that his response had been xeroxed and used for the answer key. He was noticeably surprised and could offer no explanation, although BB stated that the handwritten

amplification of his answer on the answer key was the work of Nelson Brown, Supervisor of Licensed Operator Training at TMI-1.

Additional discussions with Mr. Brown revealed that he had reviewed the answer key and the ATTS exam taken by BB, and that Category K of the exam had been modified to reflect more closely TMI plant characteristics and training material. As grader for the modified section of the exam containing the two questions at issue, he had adopted BB's answers for the new answer key because they were the best responses, although Mr. Brown had amplified the response to one of the questions. Mr. Brown also xeroxed BB's graph and taped it onto the answer key. It was obvious that BB had not cheated on the exam and the investigation was closed.

E. KK And U

In addition to the four sets of parallelisms just described, KK reported an incident of a different nature to R. Toole, TMI-1 Operations and Maintenance Director, and to Mr. Lloyd and myself on September 22, 1981. KK, an STA at TMI-Unit 1, indicated that he was on duty on April 23 or 24, 1981, when the NRC examination was being administered. During this time he received a telephone call in the TMI-1 Shift Supervisor's Office from an individual identifying himself as U, a TMI-1 Shift Foreman. KK had known U professionally since September, 1979, but not well enough to identify U's voice over

the telephone. QQ was in the room with KK during the incident but could not remember whether he heard the caller over the speaker phone or whether he remembered the call because of his discussions with KK immediately afterwards. In any event, QQ could not identify the voice either.

The caller asked KK for an answer to a technical question which KK assumed was the type of question that would be on the NRC exam. KK therefore asked U whether he (U) was taking the NRC exam. U said no, but indicated that he wanted the information for another individual, O, who was taking the exam. KK stated that he could not provide an answer to the caller because it wouldn't be fair, at which point the caller said okay and hung up.

A few days later, KK discussed the incident with O and asked him whether it was true. This was several months before the NRC investigation that identified O as having collaborated with W on the April, 1981 NRC exam. O denied any knowledge of the matter and stated that he had not asked for any help in taking his April, 1981 exam. O also indicated that the question asked was an easy one which he could answer without any assistance. KK believed him.

KK never discussed the call with U nor did U discuss it with KK. I did not personally interview U with regard to this matter because NRC OIE Investigators Peter Baci and Raymond H. Smith did so on September 24, 1981.

In the NRC interview, U indicated that during the week of April 23, 1981, he had been reviewing old exams given

at TMI and elsewhere as part of his training. He also admitted that to clarify some study material, he might have called KK to ask him a question like the one KK received. U added, however, that (1) the question asked was an easy one which he would not have needed assistance in answering; (2) he would not have called KK to help O because O didn't need the help; and (3) in any event, he certainly would not have called KK to help anybody else answer an exam question because he (U) understood that the NRC exams were to be individual efforts.

Based on my discussion with KK, my review of the NRC's discussion with U, and previous interviews I had had with U concerning rumors of cheating, Mr. Lloyd and I concluded that there was no basis for disbelieving U's denial of cheating. The NRC concurred with this opinion in OIE's Supplemental Investigation Report dated October 13, 1981 in the section entitled "Conclusions of Reporting Investigators".

In conclusion, I am confident that my follow-up interviews with the individuals suspected of cheating and my reviews of relevant training materials were timely, thorough and adequate to provide sound conclusions as to the existence of cheating by TMI-1 operator license candidates during the last several years.

IV. Rumors of Cheating

In addition to the specific instances of suspected cheating just described, several illusive rumors of cheating

were reported to Mr. Arnold after the NRC advised Licensee on July 27, 1981 of suspected cheating on the NRC April, 1981 exam. Mr. Arnold asked me to interview all TMI-1 personnel who reported or were implicated in these rumors to be sure that all suspected cheating at TMI-1 would be thoroughly investigated so that appropriate action could be taken by Licensee.

I began by interviewing NNN, Manager of Employee Communications at GPU Nuclear, who had reported a rumor about cheating on the April, 1981 NRC exam which he had heard prior to the NRC's commencement of its investigation. After two interviews with me on August 24 and 28, 1981, and one interview with Mr. Lloyd on August 26, NNN finally was able to piece together an accurate chronology of events.

As explained to Mr. Lloyd and me, on July 27, 1981, the same day that the NRC informed Mr. Arnold of its cheating investigation, NNN was informed of the investigation so that he could respond to media inquiries. The next afternoon, Tuesday, July 28, NNN's wife related to him that she had had a telephone conversation with the wife of P, a TMI-1 Shift Supervisor, in which they had discussed previous conversations about rumors of cheating during NRC exams. They also had discussed similar rumors told to both of them by the wife of T, a TMI-1 Control Room Operator ("CRO").

Later that day, NNN related his wife's statements to W. L. Gifford, Vice President of Communications. NNN also mentioned that he had heard from U about rumors of cheating on

the April, 1981 NRC exam. Mr. Gifford immediately told Mr. Arnold about the rumors, and a meeting was held in the latter's office within minutes. Mr. Gifford and I were present as NNN repeated the rumor. Mr. Arnold chastized him for not having reported the information to him sooner, after which he (Mr. Arnold) immediately reported the rumors to OIE Senior Investigator Peter Baci.

During my August 28, 1981 interview with NNN, he indicated that when talking to his wife in an attempt to refresh his recollection of the rumor chronology, she had relayed a second rumor of cheating which she had heard from the wives of P and T. U was alleged to have written on his hand and to have taken notes into the April, 1981 NRC exam. Following this interview, NNN reported the new rumor about U to Mr. Arnold's office.

Messrs. Arnold and I decided that interviews of T and U would be appropriate as quickly as possible and I arranged them for August 31, 1981. Mr. Arnold took the lead during those interviews. We spoke to U first and were unable to determine whether the rumor was true or false. U did not remember discussing any rumors of cheating with NNN and U denied that he had cheated on any mock or NRC-administered exam. In our subsequent interview with T, he claimed that his wife was an unreliable source and stated that he had begun to hear rumors of cheating only after the NRC's investigation was in progress. The truth or falsity of the rumor about U was still indeterminate at that time.

Mr. Arnold told Victor Stello of this latest rumor on September 2, 1981 and Mr. Lloyd and I interviewed U a second time on September 3. When confronted with the specific rumor alleging that he had cheated, U emphatically denied the claim. He indicated that he had been very nervous in front of Mr. Arnold during the previous interview. With Mr. Lloyd and me, however, U appeared relaxed and candid and neither of us had any reason to doubt his sincerity. We were also impressed by his sincere concern about being a target of a false rumor and his frustration with his inability to confront his accuser and thereby disprove the rumor. We therefore found, after this second interview, that there was no reason to disbelieve U's denials of cheating.

V. LICENSEE COOPERATION WITH NRC INVESTIGATIONS

I have, at Mr. Arnold's request, assisted all of the NRC investigators in the performance of their independent investigations of cheating. When the NRC investigators needed to see Licensee personnel during the time that they were on shift, I made all necessary arrangements so that proper shift coverage could be assured. The NRC was told, however, that when they wanted to speak to Licensee employees at a time when they were off shift, the Company recognized, of course, that the investigators were free to act without advising it. To that end, I did, when requested by the NRC, supply home telephone numbers of employees.

I have always had a good working relationship with the NRC OIE inspectors and, in accordance with Licensee's philosophy, have always gone out of my way to accommodate their needs. I have also personally witnessed Mr. Arnold's efforts to pass on to the NRC quickly and effectively any relevant, new information which he had obtained. In this respect, therefore, I would suggest that Licensee's management in no way restrained the NRC investigations of cheating and rumors of cheating. On the contrary, Mr. Arnold, Licensee, all of its involved employees and I put forth a great effort to facilitate NRC's investigations of these matters.

VI. CONCLUSIONS

Since the Licensee was informed of the NRC's investigation of suspected cheating, I have conducted a rigorous investigation of several incidents of parallelisms and one suspicious telephone call and have found no reason to disbelieve the denials of cheating by Licensee's employees. I have also investigated rumors of cheating and have found them to be meritless. Finally, I have assisted the NRC with their parallel investigations of cheating which have resulted in findings similar to my own. I have confidence in the validity of my conclusions and the honesty and integrity of those individuals with whom I spoke.