



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

January 29, 1988

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Charles Bechhoefer, Esq.
Administrative Judge
Atomic Safety and Licensing
Board Panel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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In the Matter of
ALFRED J. MORABITO
(Senior Operator License for Beaver Valley
Nuclear Power Station, Unit 1)
Docket No. 55-60755

Dear Judge Bechhoefer:

I am forwarding to you, Mr. Morabito and Dr. Hetrick copies of the "Joint Affidavit of Barry S. Norris and David M. Silk" in response to the questions attached to your Memorandum and Order dated November 24, 1987, as clarified by your Memorandum and Order dated December 17, 1987.

Sincerely,

Colleen P. Woodhead
Counsel for NRC Staff

Enclosure: As stated

cc w/encl.: Mr. Morabito
Dr. Hetrick

cc w/o encl.: Rest of Service List

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NUCLEAR REGULATORY COMMISSION

Docket No. 55-6075 Official Ex. No. 3
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Other _____ Witness _____
Reporter Andrew Emerson

Case No.
55-6075

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ADMINISTRATIVE JUDGE

In the matter of

ALFRED J. MORABITO

(Senior Operator License for
Beaver Valley Nuclear Power
Station, Unit-1)

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Docket No. 55-60755

JOINT AFFIDAVIT OF BARRY S. NORRIS AND DAVID M. SILK

Barry S. Norris and David M. Silk do depose and say:

1. I, Barry S. Norris, am a Senior Operations Engineer (Examiner/Inspector) in the Pressurized Water Reactor Section, Operations Branch, Division of Reactor Safety at the United States Nuclear Regulatory Commission, Region 1. At the time of the examination of Alfred J. Morabito, my position was Reactor Engineer (Examiner) within Section 1C of the Division of Reactor Projects. My responsibilities relative to that examination were as the certified examiner observing David M. Silk's administration of the simulator and oral examinations. I assisted in proctoring the written examination and I was responsible for the quality assurance review of the grading of that examination. See attachment to the Joint Affidavit of Barry S. Norris and David M. Silk (Affidavit), dated October 9, 1987, for my professional qualifications.
2. I, David M. Silk, am an Operations Engineer (Examiner/Inspector) in the Pressurized Water Reactor Section, Operations Branch, Division of Reactor Safety at the United States Nuclear Regulatory Commission, Region 1. At

the time of the examination of Alfred J. Morabito, my position was Reactor Engineer (Examiner) within Section 1C of the Division of Reactor Projects. My responsibilities relative to that examination were that I prepared, administered, and graded the written examination; and I administered the oral and simulator examinations under the observation of Barry S. Norris. See attachment to the Affidavit dated October 9, 1987, for my professional qualifications.

3. The following is submitted in response to the questions posed by Judge Bechhoefer in the Memorandum and Order (Need for Further Information and Requirement for Oral Presentation) dated November 24, 1987, as amended by the Memorandum and Order (Ruling on Motion for Reconsideration) dated December 17, 1987. All answers provided which concern operator licensing procedures refer to those procedures in effect in July, 1986 (that is, NUREC-1021, Revision 2).

4. Written Examination Question 6.03h

Judge Bechhoefer's Question A.1.a:

This [examination] question asked for three design features of the component cooling water system which minimize the effects of a rupture of the RCP thermal barrier. One of Mr. Morabito's answers which was judged incorrect was "Ability to manually isolate the thermal barriers." The Staff explains (Affidavit [dated October 9, 1987], ¶ 10) that "[a] containment entry, which is a lengthy and involved process, would be required to isolate the component and would not provide immediate reduction in the severity of the rupture" (emphasis added). The Staff goes on to state (Affidavit [dated October 9, 1987], ¶ 11) that isolation valves are "normally designed to allow maintenance * * * and

not to minimize the effects of a component failure" (emphasis added).

(1) In view of the fact that the question made no reference to the timing of the minimization of the effects of a rupture and no reference to any "normal" design feature to accomplish that purpose, is not Mr. Morabito's answer technically correct? (2) In any event, does not the ambiguous scope of the question as described herein warrant the deletion of question 6.03b?

5. Staff Response:

(1) What the Staff stated (Affidavit dated October 9, 1987, ¶¶ 10 and 11) was that manual isolation valves are not normally used for minimizing the effects of a failure. The literature provided by the facility for preparation of the written examination did not indicate that the manual isolation valves were a design feature for minimizing the effects of a failure of the RCP thermal barrier. Mr. Morabito's answer did not describe a design feature for minimizing the effects of a thermal barrier failure, but rather a system component used during maintenance. (2) With respect to the question of ambiguity, a review of the answers provided by the other three SRO candidates who took this examination revealed no indication that the question was ambiguous or vague. The Staff believes that there is no basis for deletion of this question. It should be noted that the training department of Beaver Valley Unit-1 reviewed the examination question and answer key. No comments were submitted by the facility for question 6.03.b for either the wording of the question or the technical accuracy.

6. Judge Bechhoefer's Question A.1.b:

In an examination question of this type (requesting a specified number of answers), has the Staff invariably used the method of grading described in ¶ 15 of its Affidavit [dated October 9, 1987]? (The staff should explain what is meant by the word "routinely" set forth in ¶ 15, line 9, of its Affidavit [dated October 9, 1987].)

7. Staff Response:

Many methods are available for grading questions of this type. It is our opinion that the method used (giving credit for the number of correct answers as a percentage of the total number of answers provided) is the most accurate measure of the candidate's true knowledge. By ignoring incorrect answers, the candidate would be allowed to provide as much information as possible with the hope that some of the answers would be correct. As used in the Affidavit dated October 9, 1987, (¶ 15), the word "routinely" is referring to the method most often used by experienced examiners. In addition, the NRC Technical Training Center, in Chattanooga, has used this method for many years and has incorporated it into an instruction.

8. Judge Bechhoefer's Question A.1.c:

Were candidates advised not to supply more than the requested number of answers to questions such as question 6.03b?

9. Staff Response:

The candidates were not specifically advised, by the NRC examiners, not to provide more than the requested number of answers. Whether or not the facility provided guidance to the candidates is not known by the Staff.

10. Judge Bechhoefer's Question A.1.d:

(1) Were candidates advised of penalties (either discretionary or mandatory) for a wrong answer accompanied by a sufficient number of correct answers? (2) Were they informed, prior to or at the time of the written examination, of the method of grading which the Staff is now utilizing -- i.e., that they would be given credit only for the percentage of correct/incorrect answers where more than three answers were supplied (Staff Affidavit [dated October 9, 1987], ¶ 15)?

11. Staff Response:

(1) The examiners did not discuss with the candidates how each type of question would be graded. The candidates should have been informed by the facility training staff as to how a wrong answer may be graded. (2) Again, the NRC examiners did not inform the candidates of the method of grading to be used.

12. Judge Bechhoefer's Question A.1.d(i):

If so, why was Mr. Morabito initially given 1/3 credit (0.5 points) when only one of the four answers supplied was considered correct? If the Staff were utilizing the grading method described in ¶ 15 of its Affidavit, should not Mr. Morabito initially have been given only 1/4 credit (0.375 points)?

13. Staff Response:

As discussed in ¶ 7, many methods are available to be used for grading questions of this type. The method used by Mr. Silk when initially grading the examination was to give credit for correct answers only. During a regrade, the Headquarters Staff used the method of correct answers as a percentage of total answers supplied.

14. Judge Bechhoefer's Question A.1.d(ii):

If Mr. Morabito was not informed of the grading system, should he not either be given credit for at least 2 correct answers out of 3 (1.0 points) or, alternatively, should not the question have been deleted?

15. Staff Response:

Incorrect answers demonstrate deficient knowledge just as correct answers demonstrate adequate knowledge. Both correct and incorrect answers are significant. In our opinion, to give Mr. Morabito credit for two correct answers without penalizing him for two incorrect answers would not account for the lack of knowledge indicated by the two incorrect answers. The NRC licensing process seeks to examine the candidate's knowledge and ability to cope with the duties and responsibilities associated with the license. We see no reason to delete the question, nor do we believe it is necessary to discuss the Staff's grading methods in advance.

16. Written Examination Question 6.06a

Judge Bechhoefer's Question A.2.a:

Does the phrase "cold solid plant operations" in examination question 6.06a refer only to standby conditions, or could it refer to a stage during plant startup?

17. Staff Response:

The operational modes of the plant are listed in the Beaver Valley Unit-1 Technical Specifications, Table 1.1. Mode 6 is "cold shutdown" and is defined as (1) the reactor is shutdown and (2) the average temperature of the reactor coolant system (RCS) is less than or equal to 200°F. The phrase "cold solid plant operations" is a description of a specific set of conditions of cold shutdown in addition to the pressurizer being full

of water. Prior to commencing a plant startup, it is usually a prerequisite to establish a "bubble" in the pressurizer (i.e. drain out some of the water and establish a steam space in the top of the pressurizer).

18. Judge Bechhoefer's Question A.2.b:

Is the overpressure protection system ever used "during cold solid plant operations"? If so, explain.

19. Staff Response:

Yes, the Overpressure Protection system is required to be operable per Technical Specifications. The power operated relief valves (PORV's) are part of the system, and the setpoint on the PORV's is reduced when the pressure in the RCS is less than a certain value. However, the PORV's should not be open unless an overpressure condition existed in the RCS.

20. Written Examination Question 6.06b

Judge Bechhoefer's Question A.3:

Assuming that some points should have been deducted for Mr. Morabito's acknowledged listing of an incorrect setpoint, would not a deduction of 0.1 points (rather than 0.2 points) have been more appropriate, given the nature and significance of the mistake? Please explain.

21. Staff Response:

The examiner who did the regrade of Mr. Morabito's examination decided that a description of each of the interlocks would be worth 0.3 points and that the setpoint for each interlock would be worth 0.2 points. The only guidance given by NUREG-1021 (ES-109) is that the assignment of partial credit must be consistent for all candidates taking that examination. As discussed in the Affidavit dated October 9, 1987, (%)

22), the significance of knowing the correct setpoint is important to ensuring proper operation of the interlock.

22. Written Examination Question 6.07a

Judge Bechhoefer's Question A.4:

Mr. Morabito stated that the steam generator code safety valves provide the "first" means of protection for Tav_g increases. The Staff suggests another "normal first response." The Staff also indicates that the steam generator safety valves provide a "secondary or tertiary protection for T average in a limited range of power levels." Because the question asked for the importance of steam generator code safety valves, without specifying whether primary, secondary or tertiary protection was sought, should not Mr. Morabito have been given at least partial credit for his answer?

23. Staff Response:

This question was answered in ¶¶ 19-24 of our Affidavit dated December 21, 1987. Simply put, Mr. Morabito's answer is incorrect and we have no basis to award partial credit. We believe the question is clear and unambiguous and that the correct answer would be obvious to a candidate who understands, and is familiar with, the plant design and operation.

24. Written Examination Question 6.07b

Judge Bechhoefer's Question A.5.a:

What is the purpose of the parenthetical phrase "(NOT CONDITIONS)" in the examination question 6.07b?

25. Staff Response:

The parenthetical phrase was intended as a clarification to the question; i.e., to guide the candidate in the right direction. It was meant to

distinguish between "Reason" (defined as a statement offered in explanation or justification) and "Condition" (defined as something essential to the appearance or occurrence of something else). (Webster's Ninth New Collegiate Dictionary, copyright 1985 by Merriam-Webster Inc.)

26. Judge Bechhoefer's Question A.5.b

The question asks for two reasons why the MSIV's are required to close during a main steam line rupture. Mr. Morabito's references to pages 10.3-2 and 10.3-5 of the FSAR appear to provide different reasons why the MSIV shuts -- i.e., as the primary isolator of a leak or as the backup to a non-return valve. Was not Region 1 correct in stating that the "facility literature provides many varied reasons for closing the MSIVs" and thus that "there is no definitive answer to the question" and that the question should be deleted (letter dated November 12, 1986 to Mr. Morabito, Attachment 1)?

27. Staff Response:

The reasons (see ¶ 25 for definition) that the steam generator is isolated (MSIV's shut) during a steam line rupture are correct as listed in the original answer key. What Mr. Morabito provided in his answer was essentially a restatement of the question. The purpose of the MSIV's, as designed and installed, is to isolate the steam generator during various normal and emergency conditions; one of the conditions is a steam line rupture. Upon initial grading, Mr. Morabito was given no credit for his answer. A regional regrade resulted in the question being deleted. Mr. Morabito requested a subsequent review by the Headquarters Staff (letter dated December 16, 1986) and requested that question E.07.b should be

reinstated. Headquarters personnel reviewed the examination, reinstated question 6.07.b, and awarded half credit based on the two statements being essentially repetitive. The Staff believes that there is no basis for deleting the question based on the above information.

28. Simulator Examination, General Questions

Judge Bechhoefer's Question B.1.a.(i):

Which, if any, of the four ratings of U [unsatisfactory] in this examination would be considered adequate for failure of the examination in the event that it became the only competency so rated?

29. Staff Response:

In the case of Mr. Morabito, any one of the four competencies evaluated as unsatisfactory was significant enough, by itself, to warrant an overall failure of the simulator examination. In each competency, Mr. Morabito's actions and statements demonstrated an overall lack of understanding, knowledge, and skills necessary for an SRC license.

30. Judge Bechhoefer's Question B.1.a.(ii):

May a candidate pass the examination with rating of U in two of the eight competencies?

31. Staff Response:

Yes. The Examiner's Standards do not address the maximum number of competencies that may be rated as unsatisfactory before it is required that the candidate fail the simulator examination. The Examiner's Standards do state that an unsatisfactory rating in even one competency may be basis for an overall failure of the simulator examination (NUREG-1021, ES-302, ¶ F.3). It is our understanding that an unsatisfactory rating in two or more competencies would generally result

in an overall failure of the simulator examination. It is noted that we do not recall a candidate ever having passed with more than one competency being rated as unsatisfactory.

32. Judge Bechhoefer's Question B.1.b:

How did the Staff develop the overall rating for Mr. Morabito?

33. Staff Response:

In the case of Mr. Morabito, the overall rating of failure was based on the fact that four of the eight competencies (50%) were determined to be unsatisfactory. The overall rating was determined after each of the eight competencies had been evaluated. The method for grading of simulator examinations is detailed in NUREG-1021, ES-302, section F.

34. Judge Bechhoefer's Question B.1.c:

Was any attempt made at quantitative evaluation of performance? For example, one could count the number of improper decisions, weigh them according to the degree of undesirable consequences, and compare with the number of correct decisions.

35. Staff Response:

No attempt was made to quantify the examination results. The simulator examination is, by design and necessity, not a quantitative examination. NUREG-1021, ES-303, ¶ B, states, in part: "The examiner is ultimately responsible for making a professional, subjective judgement on whether a candidate should pass or fail this segment of the examination. The forms pertaining to the oral examination should only be used as an aid to the examiner in conducting the examination and as a means of documenting the bases for the examiner's pass or fail determination."

36. Judge Bechhoefer's Question B.1.d:

Is it appropriate for a single observation or comment by an examiner to be used as a basis for a "U" rating in more than one competency? If so, what effect would such multiple use of a single observation or comment have on a candidate's overall rating?

37. Staff Response:

The competencies are not mutually exclusive; therefore, a single action or statement by a candidate could reflect a lack of understanding or ability in two or more of the competencies. If the candidate's action or statement is significant enough, it may even be appropriate for that single action or statement to be the basis for failure of the entire simulator examination.

38. Judge Bechhoefer's Question E.1.e:

The candidate's Specification of Claims includes eight items which address either ES-301 or ES-305 of the examination report. Only one of these items (5.2.A on page 6 of ES-305) is related to comments in the simulator examination summary sheet (ES-302-11 and attachments). The Staff response addresses the candidate's claims concerning ES-302-11, including the subject matter of 5.2.A, but does not address the other seven claims. [Specifically, comments 2.5.H (ES-301, p 5), 5.1.C (ES-305, p 6), 2.5.E (ES-305, p 8), 7.1 (ES-305, p 8), 6.A.7 (ES-305, p 10a), 8.8.4 (ES-305, p 10a), and 8.C.2 (ES-305, p 10a)] (i) What is the relevance of the eight competencies in ES-301 and ES-305 (other than 5.2.A) to the simulator examination? (ii) What is the significance of the circled letters A and E in the column headings of ES-305, page 6?

39. Staff Response:

(i) NUREG-1021, ES-303, section 2, details the minimum number of Control Room systems that must be discussed during the oral examination. It also allows the examiner to reduce the number of systems to be covered during the oral examination if a simulator examination is given in conjunction with the oral examination. The Staff documented the results of the systems covered during the simulator examination on the same form as the systems covered during the oral examination. Only one of the above eight items cited by Mr. Morabito in his Specification of Claims Report was related to the simulator examination, the other seven were to document deficiencies noted during the oral examination. Since Mr. Morabito passed the oral examination, the Staff did not address the comments pertaining only to the oral examination. This was explained in the Staff Response to the Specification of Claims dated October 9, 1987, on pages 3 and 4. (ii) On page 4 of the Examination Report, letters A, D and G are circled; a note at the bottom of the page explains that those columns were covered during the simulator examination. The circled letters A and E on page 6 of the Examination Report also indicate which of the systems were covered during the simulator examination.

40. Judge Bechhoefer's Question B.1.f:

Were the procedures of NUREG-1021 (Rev. 2), ES-301, E followed with respect to the orientation of the examiners who administered Mr. Morabito's simulator examination? Provide details.

41. Staff Response:

Yes. Both examiners in question had been at Beaver Valley Unit-1 during the examinations which took place in February, 1986 (Mr. Morabito's

simulator examination was administered on July 23, 1986). Mr. Norris administered simulator examinations during the February, 1986 trip; and prior to that examination, Mr. Norris had made a trip to the site in January, 1986, specifically for a familiarization with the Beaver Valley simulator. Mr. Silk was an observer during the February, 1986 examination. Additionally, the day before the simulator examinations started (Tuesday, July 22, 1986) Messrs. Silk and Norris spent the afternoon conducting plant and simulator familiarization.

42. Simulator Examination, Compliance/Use of Procedures

Examiner's Comment 1

Judge Bechhoefer's Question B.2.a(i):

Why were two power range instruments giving indications different from the other two?

43. Staff Response:

The examiners do not know why the power range instruments were not consistent, it was not part of the planned scenario. Various simulated plant conditions could have caused the phenomenon, or it could have been a simulator malfunction.

44. Judge Bechhoefer's Question B.2.a(ii):

Is a procedure required for every small power reduction, regardless of the reason?

45. Staff Response:

No. Initial reference to a procedure might not be necessary in an emergency situation where the operators are expected to take immediate actions, as necessary, to protect the plant from exceeding any safety limits. However, the examiner's comment relates to the fact that no

procedure was referenced when the power range instruments were inconsistent. Mr. Morabito should have referenced the abnormal procedure for malfunctioning nuclear instrumentation until such time as he could prove that all instruments were operating properly.

46. Judge Bechhoefer's Question B.2 a(iii):

What is a surveillance procedure (Staff affidavit [dated October 9, 1987], page 14, ¶ 41)?

47. Staff Response:

A surveillance procedure is a procedure, approved for use by station personnel, to verify that the operability of components and systems is maintained, that facility operation will be within the safety limits, and that the limiting conditions for operations will be met.
10CFR50.36(c)(3)

48. Judge Bechhoefer's Question B.2.a(iv):

What is the meaning of the phrase "believe all indications" in Staff affidavit [dated October 9, 1987], page 14, ¶ 41, in the event of inconsistent indications?

49. Staff Response:

As stated in the Affidavit dated October 9, 1987, believing all indications is a basic tenet of safe nuclear power plant operations. If redundant indications are not consistent, then an operator must determine which of the indications, if any, are not correct. In the case of the two power ranges being different from the other two power ranges, this condition could exist in the reactor if the neutron flux was not evenly distributed throughout the core.

50. Judge Bechhoefer's Question B.2.a(v):

Would this comment by itself justify a grade of U for this competency?

51. Staff Response:

No. This comment by itself would not justify a grade of unsatisfactory for the competency of Compliance/Use of Procedures.

52. Examiner's Comment 2

Judge Bechhoefer's Question B.2.b:

What is the relevance of the examiner's comment [number 2] to the "Compliance/Use of Procedures" competency?

53. Staff Response:

All procedures are written with the premise that correct information will be used in the determination of actions. If Mr. Morabito was not in a position to verify the parameter; then, rather than guess, he should have waited for and insisted upon a report from the appropriate board operator. If Mr. Morabito had proceeded based on incorrect information, he may not have been mitigating the accident but could have actually been worsening the condition.

54. Examiner's Comment 4

Judge Bechhoefer's Question B.2.c(i):

Why is this not a minor event that also illustrates good teamwork?

55. Staff Response:

The omission of one of the immediate action steps is generally not a major deficiency by itself; however, the operators are required to memorize the immediate action steps of the Emergency Operating Procedures. With respect to whether or not this demonstrates good teamwork: the correction of the oversight does demonstrate good teamwork.

on the part of the other candidate, but the reliance upon another operator does not demonstrate good teamwork on the part of Mr. Morabito.

56. Judge Bechhoefer's Question B.2.c(ii):

Would this comment by itself justify a grade of U for the competency?

57. Staff Response:

No. This comment by itself would not justify a grade of unsatisfactory for the competency of Compliance/Use of Procedures.

58. Judge Bechhoefer's Question B.2.c(iii):

Was Mr. Morabito informed prior to the examination that he would be responsible for knowing from memory the immediate actions of emergency procedures? If so, when or how? (See NUREG 1021 (Rev. 2), ES-301,H)

59. Staff Response:

Yes. Prior to each simulator and oral examination, the Briefing Check List (NUREG-1021, ES-302, Attachment 10) is read to all candidates. The first instruction states "Primary Responsibility - Operate the simulator as the plant until the exercise is ended." The facility's administrative procedures require the immediate action steps of emergency operating procedures to be memorized such that they can be performed without reference to the procedures.

60. Judge Bechhoefer's Question B.2.c(iv):

How would the Staff respond to the four rhetorical questions posed by Mr. Morabito in his reply (¶¶ 2a-d, at pp 8-9)? Answers should be provided for all simulator examinations for Beaver Valley, Unit-1. [The four questions are as follows: (2a) Has every licensed operator or senior operator been examined on his ability to remember and perform all 20 immediate action steps in sequence? (2b) Has any licensed operator or

senior operator ever gained his license even though he may have missed an immediate action step? (2c) Do the examiners restrict the senior reactor operators from reading the immediate action steps out loud from the procedure after about the seventh step? If they were going to examine an operators ability to memorize and perform all immediate action steps, they would have to restrict the senior operator from reading the steps. (2d) Do the reactor operator and balance of plant operator always perform only the immediate actions which affect their area or is their constant interaction among them such that one operator performs steps that the other operator forgets and do the steps which each operator performs vary from crew to crew?]

61. This question was clarified in the Order dated December, 17, 1987, as follows: Was Mr. Morabito held to a higher standard than other candidates in similar examinations? The Staff may answer rhetorical questions 2a-c using any number of examinations which can reasonably be categorized as statistically significant. As for rhetorical question 2d, this question is intended to be answered only with respect to simulator examinations, and the grading practices used by the Staff for such examinations. For clarity, the question is hereby modified to inquire whether a candidate who makes an error which is quickly rectified by communicative interaction with another operator would necessarily receive a "U" rating with respect to knowledge of the immediate actions of emergency procedures.

62. Staff Response:

Since examiners are only required to document actions to support a rating of unsatisfactory, it is not possible to find answers to these questions

in other candidate's records. However, to the best of the Staff's knowledge, based on years of experience in the Operator Licensing Branch, the answers to the questions are as follows: (2a) No, every licensed operator has not been examined on his ability to perform all immediate action steps. In accordance with NUREG-1021, ES-302, ¶ D.3.d, all operators must be examined on a major plant transient which will exercise their understanding of the EOPs. Each scenario used is unique in that it is used only once and is applicable only to a specific facility. This diversity is intentional to ensure that all simulator and oral examinations administered are different. Many of the scenarios are developed to cause the SRO to change to another EOP before all of the immediate action steps have been completed; thus, not all candidates are examined on all of the immediate action steps. (2b) Yes, candidates have received their licenses even though they may not have performed an immediate action step. It is incumbent upon the individual examiner to decide if a negative comment was warranted for a candidate who missed an immediate action step. This decision would be based on the safety significance of the step missed. If the only deficiency noted for a candidate was the omission of a single immediate action step, that would probably not be a sufficient basis for a failure. (2c) No, the examiners do not restrict the SRO from reading the immediate action steps. It is the responsibility of the individual examiner to observe the candidate and determine whether an immediate action step was missed. (2d) No, the two board operators are not restricted to separate portions of the control boards; rather, the boards are divided such that each has primary responsibility for certain equipment during normal operations. In the

event of an emergency, if one sees something on the other's portion of the control boards, he should inform the other for the ultimate protection of the plant.

63. Judge Bechhoefer's Question B.2.c(v):

The Staff concedes (affidavit [dated October 9, 1987] ¶ 50) that "this was the only evaluation made of the candidate's ability to properly perform the required immediate actions of the emergency procedures as a control board operator." In view of the significance of this single evaluation, did the Staff perform follow-up questioning as suggested by NUREG 1021 (Rev. 2), ES-303, B, to determine whether a rating of "M" or "S" would have been more appropriate? If so, please provide details. If not, please explain.

64. Staff Response:

No follow-up discussion was necessary to determine if Mr. Morabito could perform the required immediate action steps. The examiner observed the candidate's actions. The rating of unsatisfactory in the area of Compliance/Use of Procedures was based on the four deficiencies noted on the Examination Report.

65. Simulator Examination, Control Board Operations

Examiner's Comment 1

Judge Bechhoefer's Question B.3.a:

Would this comment by itself justify a grade of U for the competency?

66. Staff Response:

No. This comment by itself would not justify a grade of unsatisfactory for the competency of Control Board Operations.

67. Examiner's Comment 2

Judge Bechhoefer's Question B.3.b(i):

Why is this not a minor event that also illustrates good teamwork?

68. Staff Response:

This is not a minor deficiency because it demonstrated an inability to operate a piece of equipment on the control board. It cannot be considered good teamwork if assistance is required in an area for which the candidate is responsible.

69. Judge Bechhoefer's Question B.3.b(ii):

Why not delete this comment in view of the examiner's confusion about indicator lights?

70. Staff Response:

The fact that the examiner was confused about the presence of indicator lights does not negate the fact that Mr. Morabito could not verify the position of the valve, as required by the EOPs, without the assistance of the other board operator.

71. Examiner's Comment 3

Judge Bechhoefer's Question B.3.c(i):

Why is this not a minor event that also illustrates good teamwork?

72. Staff Response:

The ability to quickly and accurately locate equipment on the control boards is paramount to the ability of the operators to protect the plant, and therefore to protect the health and safety of the public. Because Mr. Morabito stopped the wrong pump, he demonstrated a lack of familiarity with the location of the equipment on the control boards.

It cannot be considered good teamwork if assistance is required in an area for which the candidate is responsible.

73. Judge Bechhoefer's Question B.3.c(ii):

Would this comment by itself justify a grade of U for the competency?

74. Staff Response:

No. This comment by itself would not justify a grade of unsatisfactory for the competency of Control Board Operations.

75. Examiner's Comment 4

Judge Bechhoefer's Question B.3.d:

Would this comment by itself justify a grade of U for the competency?

76. Staff Response:

No. This comment by itself would not justify a grade of unsatisfactory for the competency of Control Board Operations.

77. Simulator Examination, Supervisory Ability

Examiner's Comment 1

Judge Bechhoefer's Question B.4.a(i):

What is the relevance of the examiner's comment to the "Supervisory Ability" competency?

78. Staff Response:

As the supervisor, Mr. Morabito did not notice that the bypass valve was open; nor did he aggressively pursue a solution to the unresolved problem of a mismatch between the steam flow and feed flow indications for that steam generator. The SRO, as the supervisor, is responsible for knowing the status of all plant equipment. If a condition arises that is not explained, then the supervisor must attempt to find out why that problem exists.

79. Judge Bechhoefer's Question B.4.a(ii):

Was an alarm intended to be part of the scenario in question?

80. Staff Response:

Yes, when the scenario was initially designed, an alarm was expected for this malfunction (as evidenced by the scenario Simulator Administration Form attached to the Examination Report, Scenario No. SB-2, Event No. 1, page 1 of 4). When the malfunction (feed regulating bypass valve fails open) was initiated, no alarm was received because other automatic controls mitigated and masked the failure (the main feed regulating valve closed to compensate for the increasing level in the steam generator).

81. Judge Bechhoefer's Question B.4.a(iii):

Was there a simulator malfunction?

82. Staff Response:

Yes, during earlier scenarios that day, electrical problems in the simulator had been causing spikes on various recorders. However, the spiking of the recorder does not negate the fact that the feed flow and the steam flow indications were not matched. The candidates had been instructed, prior to the start of the scenarios, to consider all problems as real and not to attribute the problem to a simulator malfunction. Contrary to this instruction, and by his own admission (Specification, pages 21 and 26), Mr Morabito considered the malfunction to be a simulator problem and did not readily pursue a resolution to the problem.

83. Judge Bechhoefer's Question B.4.a(iv):

How do examiners allow for simulator malfunctions in making their evaluations?

84. Staff Response:

As in the plant, where malfunctions occur without warning, the simulator may also cause unexpected malfunctions of equipment and indications. The Chief Examiner will discuss any malfunctions with the other examiners and the simulator instructors to determine if (1) it is still possible to continue with the scenario as written or with minor changes and (2) the ability of the examiners to evaluate their candidates is not impaired, then the scenario will continue. If either of the above conditions does not exist, the scenario will be stopped and either the scenario will continue after the malfunction has been corrected or a new scenario will be started.

85. Judge Bechhoefer's Question B.4.a(v):

Was Mr. Morabito's view of the valve position indicator blocked by the balance of plant operator? If so, how could Mr. Morabito have perceived the incorrectly positioned valve?

86. Staff Response:

No. As already stated in our Affidavit dated December 21, 1987, ¶ 38, when the malfunction was initially inserted, Mr. Morabito and the two board operators all stood directly in front of the feed control valves with a clear view of the panel.

87. Examiner's Comment 2

Judge Bechhoefer's Question B.4.b(i):

Why does the examiner's comment include no specific citations?

88. Staff Response:

As discussed in ¶ 51 of our Affidavit dated October 9, 1987, the examiner's comment is a summation of the written comments made for the

competencies of Compliance/Use of Procedures and Communications/Crew Interactions that directly reflected on Mr. Morabito's inability to perform in the position of a supervisor.

89. Judge Bechhoefer's Question B.4.b(ii):

How does the use of hand signals in the circumstance cited bear on the "Supervisory Ability" competency? (See Staff affidavit [dated October 9, 1987], ¶ 71)

90. Staff Response:

As stated in the Affidavit dated October 9, 1987, ¶ 77, the use of hand signals in the control room of a nuclear power plant is not a reliable means of communication. As the supervisor, the SRO must ensure that all of the operators' actions and communications in the control room are proper and precise.

91. Simulator Examination, Communications/Crew Interactions

Examiner's Comment 1

Judge Bechhoefer's Question B.5.a(i):

What is the relevance of the examiner's comment to the "Communications/Crew Interactions" competency?

92. Staff Response:

Mr. Morabito should have confirmed with his board operator that the emergency busses were deenergized prior to entering procedure ECA-0.0. By not confirming his assumption with the board operator, he started to use the procedure for loss of all electrical power. That procedure assumes that there is no electrical power for the emergency equipment; when, in fact, one of the emergency busses was energized. Thus, Mr.

Morabito's failure to interact properly with his crew led to the use of an incorrect procedure.

93. Judge Bechhoefer's Question B.5.a(ii):

Would the candidate normally be expected to communicate with the operator before acting in this situation?

94. Staff Response:

Yes. As the supervisor, the SPO should not be involved with the board operations, but must maintain the overall plant conditions in a safe manner.

95. Judge Bechhoefer's Question B.5.a(iii):

Were the symptoms of the emergency sufficiently understood by the candidate?

96. Staff Response:

There is no way for the Staff to know this information at this time. However, based on the actions taken by Mr. Morabito on the day of the examination, it is our opinion that he did not have a good understanding of the situation.

97. Judge Bechhoefer's Question B.5.a(iv):

How much immediate diagnosis is required in this particular situation?

98. Staff Response

For immediate diagnosis, the operator only has to look at two or three meters and one breaker indication to verify if the diesel generator has started and is sequencing on the equipment. This process should not take more than fifteen seconds and should be an automatic action on the part of the board operator.

99. Judge Bechhoefer's Question B.5.a(v):

Would this comment by itself justify a grade of U for the competency?

100. Staff Response

No. This comment by itself would not justify a grade of unsatisfactory for the competency of Communication/Crew Interactions.

101. Examiner's Comment 2

Judge Bechhoefer's Question B.5.b(i):

Are there rules or standards which preclude the use of hand signals?

102. Staff Response

The Staff is not aware of any rules or standards, as such, which preclude the use of hand signals. However, we believe it is obvious that the use of hand signals is not a precise means of communication.

103. Judge Bechhoefer's Question B.5.b(ii):

Was Mr. Morabito instructed concerning the inappropriateness of using hand signals?

104. Staff Response

The NRC examiners did not give any specific instructions to the candidates regarding the use of hand signals, but the briefing given to the candidates prior to the simulator examination directs the candidates to conduct operations in the simulator as if it were the actual control room. We do not know if Duquesne Light Company training department specifically discusses this matter.

105. Judge Bechhoefer's Question B.5.b(iii):

Is there any way to resolve the controversy about whether the candidate understood this particular hand signal?

106. Staff Response

The comment initially made by the Staff on the Examination Report, Attachment 4, states, in part: "... During follow-up questioning after the scenario, the candidate admitted misunderstanding the operator's report of secondary radiation levels and assumed there was no reason to go to E-3." It is our opinion that there is no confusion as to whether or not the candidate understood the hand signal.

107. Judge Bechhoefer's Question B.5.b(iv):

Would this comment by itself justify a grade of U for the competency (or for the "Supervisory Ability" competency)?

108. Staff Response

No. This comment by itself would not justify a grade of unsatisfactory for the competency of Communication/Crew Interactions.

109. Examiner's Comment 3

Judge Bechhoefer's Question B.5.c(i):

Are there rules or standards against "thinking out loud?"

110. Staff Response

No, there are no rules against thinking out loud. In fact, on the Briefing Check List (NUREG-1021, ES-302, Attachment 10) instruction number 3 states, in part: "... It will benefit the exam process if you would verbalize your observations, analysis, and reasons for actions more than would be normal during operations."

111. Judge Bechhoefer's Question B.5.c(ii):

If the candidate's actions here were judged as merely "thinking out loud," would that by itself justify an unfavorable comment in this competency?

112. Staff Response

No. As previously stated in ¶ 53 of this document, the possible results of proceeding in the direction assumed by Mr. Morabito could have been detrimental to the plant. If Mr. Morabito was simply "thinking out loud," then it is indicative of a misunderstanding of the plant conditions.

113. Judge Bechhoefer's Question B.5.c(iii):

Is Mr. Morabito's first verbalization properly characterized as an "incorrect analysis" (Staff affidavit [dated October 9, 1987], ¶ 80)?

114. Staff Response

Yes. His statement that the temperature was greater than 395⁰F was an incorrect analysis of the plant conditions based on the observable indications on the boards.

115. Judge Bechhoefer's Question B.5.c(iv):

Was anyone mislead by Mr. Morabito's initial verbalization?

116. Staff Response

Not in our opinion, since the board operator corrected Mr. Morabito's statement immediately.

117. Judge Bechhoefer's Question B.5.c(v):

Would this comment by itself justify a grade of U for the competency?

118. Staff Response

No. This comment by itself would not justify a grade of unsatisfactory for the competency of Communication/Crew Interactions.

119. Summary:

The question was asked many times "Would this comment by itself justify a grade of U for the competency?" Each time, the Staff answered that the

individual comment, in and of itself, would not justify a grade of unsatisfactory for the competency in question. However, the number of comments in each competency was the basis for the unsatisfactory ratings and the overall failure of the simulator examination. A second question that was frequently asked was "Why is this not a minor event that also illustrates good teamwork?" The process for the NRC examination of candidates to become licensed operators is an individual examination. We do not examine a team of candidates with the concept of licensing the team as a group.

120. Based on our responses above, we believe that there is no basis for Mr. Merabito to be issued a license.

121. The foregoing are true and correct to the best of our knowledge and belief.


Garry S. Norris

David M. Silk
David M. Silk

Subscribed and sworn to before me this
29th day of January, 1988
~~1987~~

Michael A. Larkin
Notary Public

My commission expires: March 20, 1989