



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

V/eli

September 20, 1979

OFFICE OF THE
 COMMISSIONER

MEMORANDUM FOR: Harold R. Denton, Director, NRR
 FROM: John Ahearne *JA Ahearne*
 SUBJECT: EXAMINATION OF OPERATORS

The staff intends to "administer complete examinations to all licensed [operators at TMI-1] in accordance with 10 CFR 55.20-23." (See "Order and Notice of Hearing" for TMI-1, August 9, 1979 at p. 5.)

Does the staff intend to do the same for (a) all other operating reactors or (b) other B&W reactors? If not, why not?

- cc: Chairman Hendrie
- Commissioner Gilinsky
- Commissioner Kennedy
- Commissioner Bradford
- Secy
- EDO
- OPE
- OGC

NOTE: Checked with J. Fitzgerald on 9/20/79--ok.

Dupe of 7911210047 XA

Handwritten initials

COMMISSIONER ACTION ITEM

RESPONSE SHEET

TO: SAMUEL J. CHILK, SECRETARY
OF THE COMMISSION

FROM: COMMISSIONER AHEARNE

SUBJECT: SECY-79-330F - QUALIFICATIONS ^{OF} ~~FOR~~ REACTOR OPERATORS
^

CONCUR _____

NON CONCUR _____

NOTED WITHOUT OBJECTION _____

COMMENTS:

see attached

J. Ahearne

SIGNATURE
9/26/79

DATE

Comments on 79-330-E and 330-F:

The following are my comments regarding the recommendations in the papers and suggested additional steps which I believe should be taken.

Recommendation 1: I agree that the experience required for senior operator applicants should be increased. However, I believe that a senior operator should have at least 12 months experience as a licensed operator, independent of whether for a cold or hot plant.

However, I believe we should at the same time propose a new requirement which is consistent with the recommendations of the Lessons Learned Task Force and with the operating practice of, at least, the United Kingdom. This would be to place primary responsibility for control room operation in the hands of a person who has at least an engineering degree and has passed the qualification examination for licensed operator. This individual should have had at least five years experience in the nuclear power business, preferably in commercial nuclear power, and must have had at least one year of experience as an assistant engineering officer in some area of a nuclear plant. I believe the appropriate place to find these individuals is in the engineering departments of the operating utilities. The utilities should be prepared to pay commensurate salaries to get these people to leave the engineering departments and go into the operating staff.

Recommendation 2: I agree that applicants for senior operators for hot plants need experience as licensed operator, but, as mentioned above, I believe it should be twelve months. I agree that the training should be modified to concentrate on the operators rather than on the senior operators.

Recommendation 3: Agree.

Recommendation 4: I agree in the requirement to provide simulators for the training of hot plant applicants. However, there are two issues relating to the use of simulators that I believe also must be examined.

(1) It has been mentioned several times in Secy 330-E that some older plants may not have available to them simulators that adequately represent these plants. The staff should determine whether this is due to lack of simulators or lack of simulator programs. If it is a software problem and if we do believe that simulator training is critical, such software should be developed. Furthermore, if we believe simulator training is critical, we should examine the desirability of requiring the construction of simulators to represent these older facilities.

(2) This recommendation and several others stress the use of simulators. I have been informed that the Navy does not endorse this philosophy. This may be based upon significantly different reactor

control design or upon the Navy's use of prototype reactors. However, before we place major requirements upon all the utilities to switch heavily into the use of simulators and we place great reliance upon their use to provide the training we believe necessary to fully qualify operators, we should understand why the Navy does not believe they are appropriate. Attached is a letter I sent to the Navy on the subject. Perhaps a follow-up would be appropriate.

Recommendation 5: The staff recommends the NRC administer certification examinations at simulator training centers on an audit basis. The staff rejected the option of administering all certification examinations. This issue is related to the basic question of whether the NRC certifies all operators by personal knowledge or whether it certifies operators by some type of audit and regulation of the licensees. Although I recognize it would lead to an increased staff requirement, there is an analogy (albeit weak) to the review of the reactor itself. We would not find it possible to audit the compliance of the utility to our regulations in its design of a plant. We find it necessary to review in detail each design. There was no suggestion in the 70's that, as applications increased, the staff remain of the same size but instead the AEC/NRC shift to an audit form of review. Similarly, I believe that as the number of operators increases, we should increase our review staff. I do believe the NRC should directly examine every operator. Consequently, I vote for option ~~4~~ ⁵, not option ~~5~~ ⁴.

Recommendation 6: I agree with the recommendation that instructors be required to hold operating licenses and to pass requalification programs. I do not understand why it requires a rulemaking, however, and believe we should implement it on a time phasing that would enable the affected instructors to take the necessary examinations.

Recommendation 7: If we do conclude that simulators provide the level of training that the paper implies, then I would agree with this recommendation. In addition, I would require that any licensed individual who has not performed a licensed duty for six months or more, must requalify for that license.

Recommendation 8: Agree, pending resolution of the simulator issue.

Recommendation 9: My position on this is similar to that on Recommendation 5, namely, I believe the NRC should administer 100% of the requalification and oral examinations: I agree with option 11.

Recommendation 10: I agree that the content of the existing written exam should be expanded to include thermodynamics, hydraulics, fluid flow, etc. However, I believe that new categories should be created for the senior reactor operator and reactor operator exams, that is, I agree with option 14. I agree the material covered should include more than is expected to be required during the time of operation. The most

difficult circumstances arise when an individual is required to take actions beyond those encountered in the normal operation. Therefore, knowledge and understanding should exceed that required for normal operation.

However, there is one new requirement I believe must be introduced immediately, i.e., that the examinations have fixed time limits. Consequently, I believe we should impose immediately a fixed time of eight hours for the operator exam and five hours for the senior operator exam. (These times are chosen because Secy-330-E indicates that the exams are designed to be taken in this time period.) If, at some later time, for example, in response to some of the later recommendations, exams are made more complex, then it would be appropriate to extend this time. A grade should be based on the grade achieved on the answers completed during the fixed amount of time. If the question is not answered in the time, it should be graded as zero.

Recommendation 11: Agree, pending resolution of the questions regarding simulators.

Recommendation 12: I agree that SRO applicants who hold RO licenses should be required to take both oral and written tests.

Recommendation 13: Agree.

Recommendation 14: I agree with providing facility management with the detailed results of each examination. I am not sure that the appropriate follow-up action is necessarily so that the individual can be enrolled in requalification programs. It may be appropriate for the utility to conclude that the individual does not have the necessary skills to qualify.

I would agree with option 14. That is, the written exam should be expanded and that new categories should be created for both SRO and RO exams.

Recommendation 15: This is a critical one because it addresses what requirements should be established for simulator capability. I believe we need to resolve the issue of why the Navy does not use simulators and to what extent we should rely on them. Once that is resolved, we definitely should establish the appropriate requirements. I believe that we must take a more direct and active role in this rather than waiting for the ANSI group to provide their recommendations.

Recommendation 16: I do not agree with option 21, that is, continuing to use part-time examiners. I do agree with developing formal training and retraining programs for examiners. I also agree with the requirement that examiners must have passed a qualifying examination for the license for which they are examining. (I recognize this will require modification in our licensing, since I do not believe it appropriate for them to

qualify on a specific plant.) I believe we should move toward the situation where there are no part-time examiners and where we hire only those who have held a senior reactor operator license or get such a license. In the interim, I believe it appropriate to continue the use of part-time examiners under the ground rules of option 21. However, at the point where it is possible to begin phasing them out as examiners, I think we should. At that point, I believe it would be more appropriate to use the part-time people to develop the training and to teach examiners. They can also be used as audit checks.

I disagree with obtaining SROs from utilities and vendor operators.

As an additional requirement, I believe we should establish a system for keeping track of operator errors. I believe this should be in place within three months. It would entail an identification of the operators, auxiliary operators, and other maintenance personnel involved in a reportable event. (Expanding the list of reportable events is beyond the scope of this particular paper, but it is something that should be considered.) I believe there may be a tendency at present to shift equipment or procedural problems over to the catch-all phrase "operator error." I believe we must begin to keep track of individuals so that we can identify both those who need additional training and those who should not be allowed to retain a license. This pressure will also, I believe, lead to more accurate reporting of events.

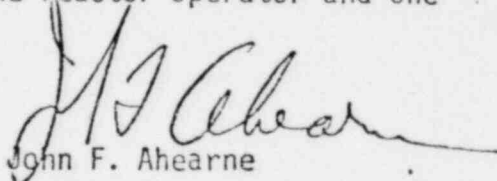
In addition to the requirements on senior technical individuals, I believe that in order to have an operator's license, individuals entering the training must have at least a high school diploma (not a high school equivalency diploma). To obtain a senior operator's license, I believe there should be a requirement of two years of college level training (or the equivalent) in appropriate subjects. I believe these requirements should be proposed for all those not yet beginning training, and consideration should be given to making them retroactive after a fixed period of time. (Some provision will have to be made for a special examination to allow those currently performing the duties to "demonstrate" an acceptable level of performance. This may be through the requalification examination.)

Passage of stress tests should be required for the senior reactor operator and senior technical person. We should begin a discussion with organizations who have been developing stress tests or are using them, for example, the Department of Defense. In addition, we should require screening of applicants for the basic operator licensing training program. One possibility would be to use the aptitude screening test used by the Navy to decide who is eligible to go into their new reactor training program. (In this case all entrants to the Navy are given sets of tests and the reactor training first screening is those that score above a certain level on a certain number of tests.)

The fundamental philosophy that I am advocating is one in which the right to be licensed to attend training programs and to be licensed as an operator is restricted. I recognize there are difficulties with this approach, but I believe the technology we are regulating justifies it.

Finally, I strongly endorse the second point made by Commissioner Kennedy in his September 17 memo. I believe we must develop training programs for the power plant personnel in areas other than those addressed in these papers. In particular, I believe we should have programs for maintenance people, auxiliary operators, and maintenance managers. However, I would go beyond that and suggest we have requirements which in which would, in some sense, lead to NRC approval of the individuals who occupy these positions.

I also believe we should modify the requirements for presence in the control room to require, at a minimum, one reactor operator and one senior reactor operator.



John F. Ahearne

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20545

April 26, 1979

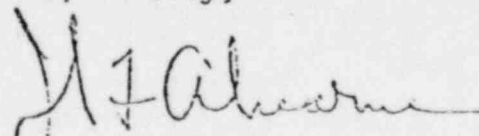
Admiral Hyman G. Rickover, USN
Deputy Commander of Nuclear Propulsion
Department of the Navy
Naval Sea Systems Command
Washington, D. C. 20362

Dear Admiral Rickover:

During the NRC discussions on the Three Mile Island investigations and on reactor operators, I have referred to you and to the Navy. Attached are, I believe, the references that have appeared in the press. In addition, the complete transcripts of the appropriate days are also attached.

As was clear in the reactor operator meeting, I currently believe the use of simulators would be useful for training operators in accident sequences. Absent additional information, I will be pushing for that training. Since your program is obviously successful, does not use simulators for accident training, and involves similar equipment to that in our plants, I would appreciate any information that can be provided concerning proper methods of choosing and training operators to handle accidents.

Respectfully,



John F. Ahearne
Commissioner

Attachments

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