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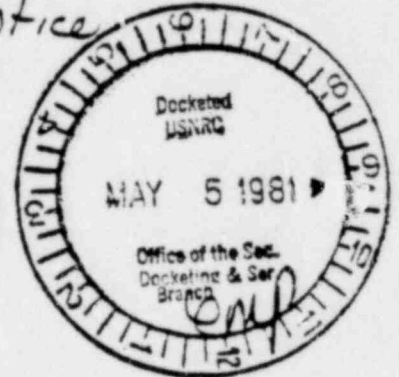
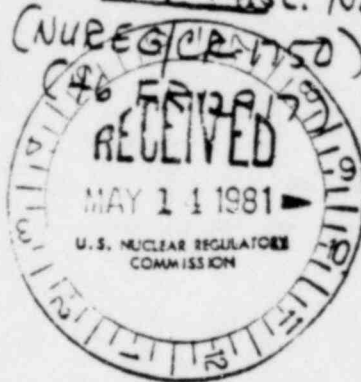
April 16, 1981

DOCKET NUMBER

PROPOSED RULE PR- Misc. Notice

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Mr. Paul F. Collins
Chief Operator Licensing Branch
Nuclear Regulatory Commission
Room 330 Phillips Bldg.
7920 Norfolk Ave.
Bethesda, Maryland 20014



Subject: NUREG/CR-1750

Dear Mr. Collins:

Babcock & Wilcox Training Services staff has reviewed NUREG/CR-1750 and believes that the study well represents the state of industry practice relative to licensed operators for nuclear power plants. We encourage the Nuclear Regulatory Commission to adopt as many of the recommendations as possible. There is existing today, as in many previous years, a feeling that the Nuclear Regulatory Commission through the Operator Licensing Branch was responsible for operator qualification. We recognize that this is not universally true, but it is true in many cases. We encourage you to further your efforts to make it clear that operator licensing relates to the protection of the health and safety of the public and such examinations be limited to this restricted scope and that the competent operation of nuclear power plants for the purpose of making electricity is the responsibility of the operating utility. We do recognize that competent operations and protection of the health and safety of the public are not separate issues.

We would recommend that the Nuclear Regulatory Commission establish procedures to require that the operating utilities train and qualify their operators for competent operation, and that it be clear that the degree to which competent operation can be achieved adds to plant availability and the reduced cost of electric service to the utilities' customers. The Nuclear Regulatory Operator examination should be only confirmatory as to the operating staff's understanding of how to protect the health and safety of the public, and a sufficiently complete proficiency examination conducted to assure operational proficiency in the handling of abnormal operations.

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We are concerned that the efforts to improve the knowledge and experience level of the plant operators (on shift personnel) has neglected a very important segment of the operating utilities' staffs that potentially has a profound effect on safe operation. The personnel of concern are the technical and managerial staffs of the plant and the utility. We believe that a new license should be authorized under a title similar to "Reactor Engineer" and that this license be applicable to the professional staff of the plant including the operations manager, shift technical advisors, nuclear engineer, plant manager, licensing engineers, and the managing director for nuclear power operation of the utility. This new license should be based on the theoretical technology of nuclear power, including reactor theory, thermodynamics, fluid flow, instrumentation, safety analysis, operational limits and their basis, radiation theory, control functions and biological effects. Obtaining this license would then reasonably assure that the technical staff and management were well qualified in the theory and hazards of nuclear power, and thus be able to direct the operations relative to the protection of the health and safety of the public for the various utilities involved in nuclear power plant operation.

We believe that there is a significant confusion of the issues of the practical aspects of power plant operations as represented by the experience required and desired in the programs related to the senior operator and operator licenses with the theoretical knowledge desirable of the plant management. Adding a new license to separate theory from practical understanding would greatly improve the total utility qualification program. As it stands now, to be the station manager would require that the individual have spent at least one year as an on-shift control operator which may not be realistic nor contribute to safety. The "Reactor Engineer" license could be obtained by engineers in approximately one year of study and would certainly demonstrate the required theoretical knowledge desired of support engineers and ultimate management of the plants.

We believe the conclusions and recommendations of Sections 2.5.3 and 2.5.4 concerning selection of reactor operator and senior reactor operator should be immediately reviewed and incorporated into the Proposed Rule-making SECY-81-84, "Qualification of Reactor Operators". It is necessary to provide technical training suitable for the tasks demanded of the reactor operator and senior reactor operator; mandating college courses in such a general way does not necessarily provide the operator the requisite understanding or skills to maintain the plant in a safe condition. Specific training determined from task analyses is much more suited to this application.

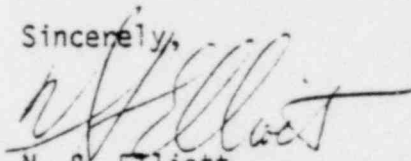
Specific comments to important sections are as follows:

<u>Page</u>	<u>Section</u>	<u>Comment</u>
2-89	2.4.5.1-1	<p>The conclusion implies that additional leadership from the NRC is needed for operator training for examinations. We do not believe that leadership should be provided by the NRC. The NRC's responsibility is to test and license operators and senior operators relative to their ability to understand the hazards of nuclear reactors and the protection of the health and safety of the public.</p> <p>There needs to be a clear difference between the operational proficiency needs to efficiently operate a nuclear power plant and the demonstration of knowledge and proficiency to protect the health and safety of the public.</p>
2-91	2.4.5.1-7.	<p>The emphasis should be placed on proficiency as demonstrated by individual or team performance on a set of simulator drills or exercises that emphasize response to accident conditions that relate to the protection of the public. The elimination of the minimum times in programs as suggested in the item should be adopted. The operating utilities should be required to use as much time as is required for them to develop the required proficiency.</p>
2-96	2.4.5.2-5.	Same as above.
2-97	2.4.5.2-6.	<p>There is a great advantage to the use of a plant specific simulator. A plant specific simulator should be interpreted as a simulator for each unique control room configuration. In addition, proficiency exams should be conducted for each control room that an operator is required to operate. In specific instances, if there are two units controlled from a single room but not identical controls two simulators should be required.</p>
2-99	2.4.5.2-10.	<p>Emphasis should be placed on simulator capabilities and performance of the simulator. Simulators that do not accurately represent the operation of the reference plant provide negative training vice the desired positive results.</p>

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2-151	2.5.5.5	<p>We agree that there may be 30 hours of highly specialized engineering courses may improve the technical performance of persons holding senior operator licenses. The requirement for a degree in engineering or science to perform the duties of shift supervisors are not practical nor would this provide a benefit. The institution of the "Reactor Engineer" license (as presented earlier) and use of such personnel early in their work career as a part of the operating shift would have great benefits in quality, career development, and management improvements. This would be analogous to the program run by the U.S. Navy for its officers (engineers or science majors).</p>
2-172	2.6.3.2	<p>Immediate instituting of performance examination for RO and SRO could make great gains in the quality of these personnel's performance capabilities.</p>
2-186	2.6.4.2	<p>This section contains positive and implementable suggestions for the improvement in the operator licensing area that will reduce the administrative burden, improve the assurance of personnel effectiveness.</p> <ol style="list-style-type: none">a. The suggestions for consistent written examinations that could be standardized and show the individual's knowledge of reactor safety issues is most important and could contribute a lot. Multiple choice exams ease grading, insure fairness, and make standard these exams. Standard exams make statistical evaluation possible.b. The inclusion of a performance examination at a simulator will reasonably assure that the individuals know how to respond to abnormal and safety conditions and can use procedures.c. The walk-through at the plant would be confirmatory of plant specific knowledge.

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2-218	2.7.1.9	Early modification of the requirement to evaluate individuals or preferably operating shift teams during requalification training for proficiency similar to the FAA program is encouraged. Modification of the program to change from an annual study of the written examination requirements is also recommended. Reactor operation is a performance skill and requalification training and recertification should be performance based.
2-244	2.8.1.1	The recommendations contained in this section are reasonable and could be readily done as a matter of practice and we encourage their adoption.

Sincerely,



N. S. Elliott
Manager, Training Services

NSE:hcv

cc: J.H. Taylor
R.E. Kosiba
R.B. Borsum