



The Ohio State University

Nuclear Engineering Program

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May 21, 1980

Mr. Harold R. Denton, Director  
Office of Nuclear Reactor Regulations  
United States Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Mr. Denton:

RE: Qualification of Reactor Operators

I have reviewed your letter of March 28, 1980 addressing the reference subject. As a nuclear engineering university educator, I wish to comment on Part D, Long Range Criteria and/or Requirements.

1a. Qualification of Shift Supervisors

I recommend that you be more specific in the requirement of an engineering degree. There are some degree programs which are inadequate in their coverage with regard to the requirements of a shift supervisor. Specifically, there are some degrees where the coverage of thermal science and reactor physics are inadequate. Therefore, I recommend you specify the general course coverage required in the engineering degree.

1b. Qualifications of Senior Operators

I recommend you be cautious in the specification of credit hour requirements at the college level. There appears to be some misunderstanding as to the meaning of a college credit hour. Specifically the 60 semester hours of college level subjects specified for senior operators in fact implies approximately 900 classroom hours. However, college instructors normally assume they will be assigning approximately 2 hours of work outside the classroom for every hour in the classroom. As a consequence, 60 credit hours implies approximately 2700 hours of work for the average student. Obviously, students of superior ability will complete them in fewer hours and vice versa.

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In regard to implementation, I recommend that an attempt be made to specify requirements consistent with most engineering undergraduate programs. There are two reasons for this recommendation. First, we anticipate that many utilities will want to utilize the capability of local community colleges whenever possible, specifically for basic freshman and sophomore level work. This will be particularly true when there is no large university with an engineering program in the vicinity. Community colleges usually offer courses which can be easily transferred to an engineering degree program. They will in all probability be reluctant to change their program for a small number of plant operational staff who might require special course work.

The second fact you should consider is that currently there is an insufficient supply of engineering faculty at many universities in the United States. We in the university community expect the shortage will continue for the next several years. As a consequence, there may be some reluctance to make major modifications in current courses to meet NRC requirements. In addition, I anticipate a difficulty in obtaining sufficient number of college level instructors who are able to teach specialized courses at the plant site or at nearby educational facilities.

I trust my comments have been helpful to you in this important area of specifying training and education requirements of reactor operations personnel. I believe we in the university community can provide helpful advice in development of portions of this program. I personally believe the moves we are making in this area are somewhat overdue. However, I do fear the possibility of overreacting and requiring too much university level education for too many members of the operations staff.

I look forward to the opportunity of commenting on future documents as you begin to specify the details of these programs.

Very truly yours,

Don W. Miller  
Chairman

cc: OSU - Nuclear Engineering Faculty

E. C. Wenzinger, Chief  
Standards Branch  
Nuclear Regulatory Commission