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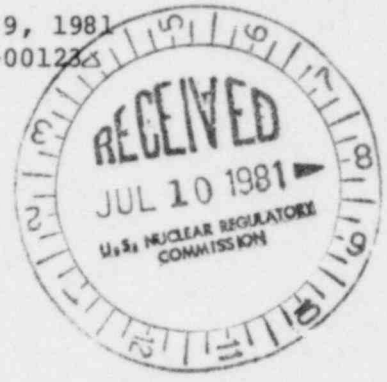

Dr. Steven H. Hanauer, Director
Human Factors & Safety Division
U.S. Nuclear Regulatory Commission
7920 Norfolk Avenue, Room P-518
Bethesda, MD 20014

Dear Dr. Hanauer:

Proposed Qualification for Operators and Shift Supervisors

The NRC has been working to develop revised regulations and standards concerning qualifications for control room operators at nuclear power plants. A recent document entitled "Operator Qualifications and Licensing Proposed Rule (SECY-81-84)" has been circulated by the Institute of Nuclear Power Operations (INPO) soliciting industry comments and requesting the comments be sent to you. General Physics would like to submit the following comments on the proposed rule for the NRC's consideration.

In order to understand the perspective of our comments, some understanding of General Physics Corporation is necessary. General Physics is a consulting company that has been providing personnel training services to the nuclear industry since 1969. We have worked with essentially every nuclear utility in the United States and have developed a solid understanding of utility practices and problems as well as NRC regulations and licensing requirements. Since the proposed rule changes do not affect us directly, we believe there is a degree of detachment that may increase the validity of our comments. Moreover, our broad experience with many utilities enables us to make suggestions of the generic kind that are most appropriate for rulemaking.

Background

Post-TMI analyses have generally recommended an increase in the education and experience requirements of the shift personnel who operate nuclear power plants. A major question has been the adviseability of requiring a degreed engineer to be in charge of the shift. Very few Shift Supervisors at operating nuclear power plants are currently degreed. Shift Technical Advisor (STA) requirements were implemented as an immediate move to supplement shift technical depth while overall qualification requirements for shift personnel were devised. INPO has been active in developing training and qualification requirements for nuclear operators and engineers.

The NRC, in SECY-81-84, has published its proposed rules for qualifications of shift personnel. The major changes included in the proposed rule are a separate licensing classification for Shift Supervisor (SS) and a minimum number of semester hours of college credits for Senior Reactor Operators (SRO) and Shift Supervisors. In addition, certification procedures and qualification requirements for the Shift Supervisor are included in the proposed rule.

Comments

1. College Credit Requirements - The proposed rule would require persons licensed as SS and SRO to have 60 and 45 semester hours, respectively, in college level technical credits. College level training is important for control room operating personnel. Much of the training already received by these personnel is comparable to undergraduate degree programs. The Naval Reactors training, which is included in the experience of many operators, is widely recognized as having the same rigor and educational value as 1-2 years of an undergraduate engineering program. The training conducted by vendors, suppliers and the utilities is based on college level texts, materials and standards. Several accredited undergraduate degree programs currently give college credit for this training. However, the proposed rule which focuses on college credit rather than the kind, quality and content of this training is not adviseable.

   Since the TMI accident, there has been a significant increase in the involvement of colleges and universities in the training of power plant personnel. This has been true particularly for STA training and for those utilities anticipating degree requirements for shift personnel. The results of this increased involvement have been mixed. Some good technical education has resulted but the applicability of some of the effort to the real needs of the operating staff is questionable. Not all college instructors are able to relate technical subjects to their operational significance in a nuclear power plant. Moreover, there appear to have been some college programs specially designed to satisfy pending NRC requirements that were little more than a "quick fix" to a problem and did not provide a substantive improvement in the way that utilities train operators. In several other technical fields such as computer technology, it has been found that colleges and universities are not the best vehicle for continuing technical education. There is considerable evidence that this may also be the case in the field of nuclear power operations. As a minimum the proposed rule should take into account other ways to receive the required training.

The NRC and the industry are undertaking task analyses for nuclear plant operators. These studies will identify training and education needs that are appropriate for the various positions in the control room. It appears that these efforts hold the greatest promise for accurately determining the real requirements of the jobs of various individuals in the control room and the level of education, training and experience needed to function in those positions.

In summary, we believe that an alternative to the proposed rule should be consi that concentrates on the kind, quality and content of the edu nd training required for the SS and the SRO rather than on the numbe. of college credits received. In addition, specific provision should be made for the college level training received by these personnel that does not normally receive college credit. The NRC should determine the level of training required, devise evaluation criteria to determine the effectiveness of training delivered and monitor to its satisfaction that individuals assigned to responsible positions in the control room are fully capable of fulfilling their responsibilities.

2. Special License for Shift Supervisor - Post-TMI studies show the importance of well-defined lines of responsibility and broad capabilities of the one person in charge of the shift. The licensing requirement of the SS in the proposed rule seems appropriate and the eligibility requirements outlined in proposed Appendix B establish minimum requirements for the SS. Certification by the operating utility allows flexibility in developing procedures to determine if an individual meets the Appendix B requirements without adding a new workload to the already strained capabilities of NRC examiners. Specifying a "license", however, infers an administrative workload for the handling of applications and reissuance of licenses by the NRC. An alternative of auditable certification procedures maintained by the utility, in our view, would be preferable to the establishment of a new class of license while meeting the intent of the proposed rule.

3. Effect on Current Shift Personnel - The proposed rule allows operating experience to be used to substitute for part of the semester hour requirements. For the majority of SROs and SSs at operating plants, however, the proposed rule will still require an average of 2 college courses per year over a period of 4-5 years. Such a requirement places heavy burdens on the personal lives of individuals undertaking the courses and substantial overtime demands on the remainder of the shift to permit time for participation in the program. This requirement may actually discourage capable operators from staying in their jobs and decrease the experience level of personnel operating nuclear plants.

Some provisions should be made to permit individual evaluation of the persons presently in SRO and SS positions and allow making a judgement as to the necessity of the semester hour training. A procedure of written testing or oral board examination might be used to permit capable individuals to continue in their present assignments without the fixed additional burden of participating in college courses over a long period of time.

4. Progression Path for Degreed Engineers - With the STA requirement and strong interest in having degreed people associated with shift operations, many utilities have encouraged engineers to train for and be assigned as SS. Under the proposed rules, it would take such an individual 4-5 years to progress through the licensing and experience requirements for SS. If degreed engineers are to be encouraged into the SS position, provisions should be made to allow them to qualify in a shorter time. With training requirements and solid shift experience, a degreed engineer should be able to function as SS in 2-3 years.

5. Effect on Plants Under Construction - The proposed rule adds substantially to the length of experience required to qualify as SS. The SS position is required by technical specifications to be filled by qualified individuals at the time of fuel loading. The only source of such experienced individuals is from operating nuclear power plants. The proposed rule could result in severe competition for experienced personnel with the resulting disruption of the workforce and dilution of experience at operating plants. Provisions should be made to allow plants under construction to meet the intent of the proposed rule using modifications of traditional staffing and cold license training programs.

The nuclear industry has always had a strong commitment to training and staff qualifications. The industry will support rule changes that will result in safer plant operations. Changes in qualification requirements must, however, have a clear relationship to the responsibilities of shift personnel and should not drive persons out of the industry who have a proven record of competent, effective and safe plant operation. The proposed rule could be made compatible with qualification standards under development by INPO and by task analyses that are being undertaken in the nuclear industry. It is important, however, that the rule be imposed in such a way that near term safe operations do not suffer in the effort to make longer-term improvements.

We appreciate the opportunity to comment on this important topic. If you would like any amplification or clarification, we will be happy to supply it.

Yours truly,

GENERAL PHYSICS CORPORATION

J. W. Whitney
Executive Vice President

JWW:cep

cc: Mr. E. P. Wilkinson, INPO