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June 9, 1981



[Signature]
Dr. Hanauer

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

Subject: Proposed Qualification for Operators and Shift Supervisors

Dear Dr. Hanauer:

The ANS-3 Sub-Committee on Reactor Operations and Support Systems has been very active in the last two years rewriting and resolving comments on a new ANS-3.1 "Standard of Qualification and Training of Personnel for Nuclear Power Plants." Members of the writing committee for ANS-3.1 have recently been made aware of a second draft of SECY 81-84 "Operator Qualifications and Licensing Proposed Rule." This proposed rule, together with the latest draft of Regulation Guide 1.8, which significantly increases ANS-3.1 educational and experience requirements of Shift Supervisor, Senior Reactor Operator, and Reactor Operator, has the potential of degrading the safety of the operating facilities as well as new facilities expected to be licensed in the near future. As you know, because of the requirements imposed on the industry following TMI, nuclear qualified experienced operations and engineering personnel are being sought by training vendors, government, nuclear steam suppliers, architect engineers, and operators of new and operating nuclear power facilities. This rapid increase in the need for experienced personnel has already resulted in escalation of wage scales and the loss of experienced personnel from operating facilities. This exchange of talent and information may be valuable provided it does not degrade the level of competence at the operating plants. This proposed rule along with the proposed revisions to Reg Guide 1.8 will cause additional loss of experienced qualified personnel from operating facilities due to early retirements, assignments to educational activities, or change of positions outside of the operations area.

In an attempt to clarify the above concern, the following comments are provided:

1. Shift Supervisor License
 - a. Educational Requirements

The new proposed rule has eliminated the need for an engineering degree to fulfill the educational requirements of the Shift Supervisor. It has substituted 60 semester hours of college level education in related technical subjects. No guidance regarding what constitutes college level course material is provided other than that accredited by a recognized educational body. Proposed Rev. 2 to Reg Guide 1.8 takes the position that college level education should be construed to mean course work conducted by a collegiate institution with curricula

accredited by a nationally recognized agency such as The Accreditation Board of Engineering and Technology. In specifying 60 semester hours of college level education in ANS-3.1 (5/19/80 draft), paragraph 4.3.1.1.a, the ANS-3 members did not intend to prohibit the utility or its vendor from providing this course material at the proper degree of difficulty as part of its own training programs.

The proposed rule requires a minimum of six semester hours for licensing or relicensing of a Shift Supervisor after 1/1/82. Since this education must start in 1981 in order to meet the phased educational requirements for relicense applications, a mechanism whereby vendor, or utility provided education can be qualified or approved prior to implementation of the rule is a necessity. Without this, all present shift supervisors whose licenses expire in 1982 must be enrolled in a college course at this time since no other means of satisfying college level education is provided. Since the rule has not been published, present shift supervisors who must relicense in 1982 have less than one year to obtain six semester hours at college level credits. This is not in keeping with the intent of the rule which expects presently licensed shift supervisors to obtain six semester credits per year.

The proposed rule would require each licensed shift supervisor to dedicate approximately 270 hours/year to obtain these six credits. These individuals are already involved in a requalification program which may involve 60 hours/year of lectures, eight hours/year of written and oral exams, a minimum of 40 hours/year of simulator training and approximately 50 hours/year of self-study. They also receive special training in the Emergency Plan (8 hours/year), and fire protection (8 hours/year). Assuming the individual has been with the company for some period of time, he would also be entitled to approximately 160 hours/year of sick or vacation time. Overall, the shift supervisor would be engaged in non-licensed duties about 1/3 of a normal 40 hour week on a yearly basis.

The obvious remedy for this situation is to obtain and qualify more individuals to the shift supervisor position. This was recognized several years ago and many utilities initiated programs to increase the staffing of their facilities. Recognizing the importance of maintaining experienced qualified operators outside the control room and the need for that experience as a prerequisite for licensing, personnel were obtained and training programs initiated to qualify outside operators in order to release existing personnel for licensing training. These newly licensed operators can then release experienced licensed personnel for senior reactor operator training and eventual promotion to shift supervisor. This program has been hampered by the additional licensing requirements, restriction of working hours, and the ability of the facilities to assimilate significant numbers of additional personnel without degrading safe operation. In some cases, utilities will not have sufficient senior licensed personnel to support the education of their present shift supervisors and still provide sufficient supervisory personnel for safe operation until 1984 or 1985.

In view of the hardships imposed by the proposed rule, the schedule for obtaining educational credits should be rewritten to require presently licensed shift supervisors to obtain a minimum of three semester credits per year only after the rule is implemented, after sufficient licensed personnel are available to support this training, and after guidance is provided regarding what constitutes college level education. Credit for experience as a senior reactor operator or reactor operator should be given for up to 60% of the 60 semester education credits at the rate of six credits/year of experience. This reduced schedule still provides for the desired education with minimum impact on safe staffing levels in the operating facilities.

b. Experience

The proposed Appendix B, paragraph II B.2 states:

"Individuals occupying these positions after January 1, 1982, shall have five years of responsible nuclear power plant experience, including two years of control room experience as a licensed senior operator. Similar experience on other nuclear power plants may substitute for this experience. In no case shall individuals be given this broad responsibility without having a minimum of one year of control room experience as a senior operator on the unit at which the supervisory designation is made. Before initial facility operation, the Commission may waive this last requirement and substitute case-by-case requirements to accommodate the fact that the facility has not yet been in operation."

Page 18 of the Secy 81-84 indicates the following:

"Proposed Appendix B would also require that, on January 1, 1982 and thereafter, individuals occupying the position of shift supervisor must have at least five years of responsible nuclear power plant experience, including two years of control room experience as a licensed senior operator. This proposed minimum requirement is based on the need to ensure that the individuals have extensive practical experience in plant operations. This requirement would be applied to facilities that have not yet operated since, in the first few years, there is a premium on having experienced personnel in the control room."

This rule tends to force new facilities to obtain individuals with 5 years of responsible nuclear experience from existing operating facilities or the nuclear Navy, in order to fill their shift supervision positions. "Responsible" is not defined. The phrase "including two years of control room experience as a licensed senior operator" may exclude Navy personnel and require the owners of new facilities to recruit senior reactor operators from operating facilities to fill their shift supervisor positions. This is clearly undesirable for both the operating facility and the new facility. Provisions must be provided for initial facility staffing which does not result in the loss of experienced and competent personnel from the operating facilities.

Requiring a shift technical advisor during the startup period and one year thereafter may be one acceptable alternative. Endorsing the experience requirement of ANS-3.1 provides another.

The requirements outlined in ANS-3.1 (draft 5/19/80) paragraph 4.3.1.1.b specifies experience as follows:

"b. Experience: At the time of initial core loading or appointment to the position, whichever is later, a Shift Supervisor shall have four (4) years of power plant experience of which two (2) years shall be nuclear power plant experience. During the two years, the individual shall have participated in reactor operator activities at an operating nuclear power plant during the following periods:

- (1) Six (6) weeks operation above 20% power.
- (2) Startup from subcritical to 20% power.
- (3) Shutdown from above 20% power to cold (less than 212°F) and subcritical.
- (4) Startup preparations following a refueling outage."

Paragraph (1), (2), (3) and (4) above specify the important aspects of plant operation that supervisors at new facilities should have experienced in order to make sound judgments during startup and initial operations. The members of the committee placed less emphasis on duration of repetitive experience and more on the quality of the experience. The experience requirements above can be met by new facilities with some off-site assignments of their personnel. Several operating facilities have volunteered to provide this experience. NRC endorsement of the above experience requirements for shift supervisor would significantly reduce the magnitude of the loss of operators and senior reactor operators from operating facilities.

c. Training

Part of the proposed training requirements under the proposed rule states:

"Individuals assigned to the positions shall have:

- a. . . .
- b. . . .

c. received three months of shift training, with no other concurrent duties assigned on the unit for which the supervisory designation is made. During this training the applicant shall, under the observation and control of a designated shift supervisor, exercise control over overall shift operations. Before initial facility operation, the Commission may waive this requirement and substitute case-by-case requirements to accommodate the fact that the facility has not yet been in operation."

The above three month assignment is of no value since, in most cases, a senior reactor operator has observed and been involved with the shift supervisor in controlling shift activities and in making decisions associated with plant operations, response to transients, and administrative matters for several years prior to promotion to this position.

This particular portion of the training is only necessary if the individual has not had one year of senior reactor operator experience at that site or has not been assigned to shift duties prior to assignments to the shift supervisor position. Allowance should be provided for waiving this requirement based on shift SRO experience of the candidate.

2. Senior Operator License

a. Education

The proposed rule requires 45 semester hours of college level education. The ANS-3.1 (draft 5/19/80) specifies 30 semester hours. ANS-3 members had no valid justification for the 30 semester hours and the proposed rule provides no justification for the 45 semester hours. The result of requiring additional education is reduced time performing licensed duties, additional staffing requirements, and delays in achieving full qualifications for the shift supervisor position. The training and educational process must flow from lower classifications to higher classifications such that adequate manning of the operating facilities are maintained. Comments regarding scheduling of educational requirements provided in comment 1.a of this letter are also valid for the Senior Operator Licensed position.

3. Operator Licenses

a. Education

Both the proposed rule and ANS-3.1 (draft 5/19/80) specify a high school diploma. The proposed rule makes this requirement applicable to initial applications received after December 31, 1981. Presumably, this will not be required for individuals who are presently licensed. The ANS-3 committee had a great deal of discussion on the acceptability of high school equivalency exams. The committee eliminated acceptance of equivalency exams based on pressure from NRC staff. Most of the industry members support acceptance of GED since it is only one part of the requirements for a licensed operator. Ability to complete a licensing program and obtain a license is more demanding and demonstrates an individual's motivation and self-discipline to a far greater extent than his ability to graduate from high school. An individual should not be denied an operator's position based on some lack of desire, or other unknown financial or personal problem, which may have occurred in the past.

4. Licensing of Engineers

The proposed rule makes it difficult to license engineers in preparation for future promotion to such positions as Technical Engineer, Operations Engineer, Shift Supervisor, etc. Under the proposed rule, an engineer would be required to work at a facility for one year including six months of duties as a non-licensed operator prior to obtaining a reactor operator license. In most facilities, union contracts or internal working rules would prevent an engineer (part of the plant staff) from performing non-licensed operator duties. This is also not necessary since these engineers routinely are involved in plant equipment testing and troubleshooting and therefore obtain a good knowledge of plant operations.

After becoming a licensed operator, the engineer must work as a licensed reactor operator for a period of one year prior to obtaining his senior operator license. Again, most facilities would have difficulty with union contracts and working rules and could not assign a staff engineer to a licensed operator's position.

The proposed requirements would require that an engineer work or train at a nuclear facility for about five years prior to obtaining an SRO. This is unnecessary and will discourage engineers from accepting assignments in the nuclear plants. The proposed rule should be amended to provide for licensing of graduate engineers to the senior level based on their education, experience and operations training during the licensing program. One proposal is as follows:

1. Bachelor Degree in Engineering or related science.
2. Three year power plant experience of which two years are nuclear power plant experience.
3. Licensing training program which includes three months of operations under the guidance of a reactor operator and one month under the guidance of a senior reactor operator.

5. Shift Technical Advisor

The requirements of obtaining college level educational credits may be difficult to meet for some experienced presently qualified shift supervisors. These individuals have a great deal of experience and have demonstrated competence in performance as a shift supervisor. They are older individuals (over 45) who have no interest in pursuing the college level educational credits. The proposed rule would force these individuals into early retirement or into other jobs, thereby reducing the experience level at the operating facility and increasing the need for additional personnel.

The ANS-3.1 (draft 5/19/80) paragraph 4.3.1.1.a permits the shift supervisor who does not meet the educational requirements to remain in that position provided a Shift Technical Advisor is present on that shift. ANS members recommend that the proposed rule be amended to permit use of an STA for an indefinite period if the Shift Supervisor does not meet the educational requirements. This could be a condition of the Shift Supervisor License the commission intends to issue under the proposed rule. The operating and possibly new facilities require this flexibility to meet the shift manning requirements for an indefinite period. This flexibility provides additional options in establishing an operating shift which has the experience and analytical talent to assure safe operation.

6. Annual Examinations

The proposed addition to 55.40(c) provides for the suspension or revocation of a license if the annual examination is not satisfactorily completed. ANS-3.1 (draft 5/19/80) paragraphs 5.5.1.3.1, 5.5.1.3.2 and 5.5.1.3.3 indicate that individuals shall not perform licensed duties while in an accelerated requalification program after having failed to achieve the required grades in their annual written or oral examination. With the proposed rule, the NRC would presumably suspend a license if the annual examination is not satisfactorily completed until the licensee provides documented evidence of satisfactory completion of an accelerated training program and re-examination. The proposed rule is not clear on how a suspended license would be reactivated. In any case, having the NRC suspend and reactivate a license based on requalification exam results could be a significant NRC administrative work load and, because of clerical delays, result in suspension of licenses for periods in excess of that required to provide and verify the effectiveness of the remedial training.

The committee suggests that having licensees commit to the requirements of ANS-3.1 provides the same result and reduces the administrative requirements. Audits of licensees would ensure compliance with this requirement. Paragraph 55.40(c) should be deleted.

7. Condition of Licenses

Paragraph 55.31(e) is amended in the proposed rule as follows:

"(e) (1) If a licensee has not been actively performing the functions of an operator or senior operator for a period of four months or longer, the operator or senior operator shall, prior to resuming activities licensed pursuant to this part, demonstrate to the Commission that the knowledge and understanding of facility operation and administration are satisfactory. For nuclear power plant licensees, this demonstration shall include recertification on a simulator of the same type as required by Appendix B to this part.

(2) The Commission may accept as evidence, a certification by an authorized representative of the facility licensee by which the licensee has been employed."

The simulator demonstration of competence required by this proposed rule could result in significant delays in returning individuals to licensed activities after an illness or temporary assignment. Availability of simulator time for the required demonstration may result in increasing the inactive period of a licensee. An alternative to use of a simulator should be provided. This requirement should be modified to permit certification by the facility based on criteria developed by the NRC. NRC audit would ensure adherence to the requirements. This method would reduce the clerical work load for the NRC, minimize the inactive period of the license, and still assure the NRC that operator competence is demonstrated prior to resuming licensed activities.

8. General

ANS-3 agrees with Mr. Gilinsky's recommendation that an Ad Hoc Committee be set up to review the program and to develop a recommended overall plan and goal for technical qualifications before making the rule final. The committee should, however, be composed of representatives of the nuclear industry (INPO, ANS-3, etc.), as well as specialists within the Federal agencies. ANS-3 would welcome an opportunity to provide information or representatives to this group. The nuclear industry has experienced many false starts and unjustified requirements in the past two years. Many competent, highly qualified individuals have become disheartened and are leaving the industry. Publishing rules which have significant impact on these individuals without adequate data and real justification will reinforce this trend.

ANS-3 recognizes that on numerous occasions the Commission has utilized the Regional meeting procedure for generating comment and discussion on proposed rules. The committee believes the importance of the rules relating to operator qualification warrants the use of this procedure for these rules. ANS-3 recommends that the Commission hold Regional meetings to fully air these proposed rules.

Hopefully, the above comments will be given adequate consideration and changes to the proposed rules can be made to avoid the difficulties and negative effects which will result if the present document is adopted.

Very truly yours,



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Vice Chairman, ANS-3

WTU:llh

cc: Secretary of the Commission
S. D. Richardson

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