DRAFT VALUE/IMPACT STATEMENT FOR PROPOSED ACTION TO PROVIDE GUIDANCE ON THE CHARACTERISTICS OF NUCLEAR POWER PLANT SIMULATORS FOR USE IN OPERATOR TRAINING

I. The Proposed Action

A. Description

Prior to issuing an operators license to an applicant, the commission regulations require that evidence be shown that the applicant has learned to operate the controls in a competent and safe manner. In accordance with ANSI/ANS standard 3.1-1978, "Qualification and Training of Personnel for Nuclear Power Plants," and Regulatory Guide 1.8-February 1979, "Personnel Selection and Training" (issued for comment), reactor simulators may be used to partially fulfill this requirement. In addition, title 10 CFR Part 55, Appendix A describes the use of simulators for requalification programs and NUREG-0094 describes the use of simulators for initial licensing. The proposed action would provide guidance on the acceptable characteristics of reactor simulators used as described in the above references.

B. Need for the Proposed Action

Needed improvements in operator training in the areas of abnormal and emergency training are apparent by operator errors as reported in LER's and especially by the types of operator errors noted in NUREG-0585, "TMI-2 Lessons Learned Task Force Final Report." Actual accident training on the plant would result in additional challenges

to its protective features and is therefore undesirable. As a result, additional training required to improve operator performance should be performed on simulators. A recommendation to require simulator training for initial and requalification training was made in SECY 79-330E, "Qualifications of Reactor Operators," dated July 30, 1979. The simulators used for current training and proposed future training should have characteristics which allow meeting the objective of training the operator to operate the controls in a competent and safe manner. The action proposed by this value/impact statement is expected to assure meeting the above objective and also establishes an NRC position on the draft revision of Standard ANS 3.5 which was recommended by SECY 79-330E dated July 30, 1979, and accepted by the Commissioners as reported by the memorandum from S. J. Chilk to L. V. Gossick dated November 27, 1979.

C. Value/Impact of the Proposed Action

1. NRC Section 5 of ANSI/ANS 3.1 - 1978 (endorsed by Regulatory Guide 1.8) "Selection and Training of Nuclear Power Plant Personnel" refers to "suitable" (Paragraph 5.2.1) or "appropriate" (Paragraphs 5.2.4 and 5.5.1.2.2) when describing reactor simulators used for training personnel. The value of the proposed action to the NRC will be guidance on what is a "suitable" or "appropriate" reactor simulator when reviewing licensee training programs for adequacy. The impact of the proposed action will be the time spent in developing the guidance, the time spent reviewing the licensee's proposals to comply with the guide, and the time verifying implementation of the proposals.

2. Other Government Agencies The proposed action should not impact other government agencies, unless the government agency is an applicant, such as TVA.

3. Industry The result of the proposed action is expected to be additional requirements on the types of simulators that may be used for a specific nuclear power plant. The impact on industry will likely be increased cost as more complex and additional simulators or simulator training is required. An alternative to simulators is use of the actual power plant for training resulting in increased cost when the power plant is not available to produce electrical power and additional challenges to the plant protection systems. The value of the proposed action to industry should be (1) more efficient operation of the power plant resulting in a cost savings when the power plant is put on line in an expeditious manner and (2) a reduction in operator errors causing plant down time and/or equipment damage. The value is based on using simulators which more accurately reflect the power plant they represent and which simulate additional accidents, transients, and evolutions in a more complete manner than can be performed on an actual plant.

4. Public The value to the public will be that the better trained operators should reduce the possibility of improper operation of Nuclear Power Plant Equipment or Systems which could endanger public health and safety. The impact will be slightly higher electrical rates caused by higher costs as explained in Item 3 above.

D. Decision On Proposed Action

Guidance on the acceptable characteristics of reactor simulators should be provided.

II. Technical Approach

The decision to use simulator for training of operators has been made by the Commissioners in their action on SECY-79-330E.

III. Procedural Approach

A. Procedural Alternatives

1. Regulation
2. Preparation of a Regulatory Guide
3. ANSI Standard, endorsed by a Regulatory Guide

B. Value/Impact of Procedural Alternatives

The value of alternative (1) is that it would have the full force and authority of a law. The impact of alternative (1) is the difficulty in obtaining approval and the lack of flexibility in implementation. The value of alternative (2) is that it achieves the desired result with suitable flexibility for innovation by licensees. The impact is that it may not take full advantage of the work performed by industry which may result in a longer period prior to issuing the guide. The value of alternative (3) is that it achieves the desired result taking advantage of the work performed by industry on the draft revision to Standard ANS 3.5 "Nuclear Power Plant Simulators For Use in Operator Training." The impact of alternative (3) is the effort

by the NRC in preparing, reviewing and issuing the regulatory guide. It is estimated, however, the the effort on the proposal would be greater if alternatives (1) or (2) were chosen.

C. Discussion on Procedural Approach

The proposed action should be accomplished by a regulatory guide endorsing the approved revision to ANS 3.5.

IV. Statutory Considerations

A. NRC Authority

The proposed action would fall under the Atomic Energy Act of 1954 and the Energy Reorganization of 1974. In particular, Part 55 of 10 CFR applies.

B. Need for NEPA Assessment

An environmental impact statement is not required since the proposed action is not a major action that may significantly affect the quality of the human environment.

V. Relationship to Other Existing or Proposed Regulations or Policies

Regulatory Guide 1.8 Revision 2 and Appendix A to 10 CFR 55 makes reference to simulators used in the training program for operators. Only general statements are made concerning the characteristics of acceptable simulators. The proposed action will be consistent with and provide additional guidance in this area.

VI. Summary and Conclusion

A regulatory guide providing guidance on the characteristics of "Nuclear Power Plant Simulators for use in Operator Training" should be prepared. The guide should endorse, with possible exceptions, the draft revision to ANS 3.5.

References

1. ANSI/ANS Standard 3.1-1978, "Standard for Qualificaiton and Training of Personnel for Nuclear Power Plants."
2. Regulatory Guide 1.8, "Personnel Selection and Training."
3. Title 10 Code of Federal Regulations Part 55, Revised January 1, 1979.
4. NUREG-0585, "TMI-2 Lessons Learned Task Force Final Report."
5. NUREG-0094, "NRC Operator Licensing Guide."
6. SECY 79-330E dated July 30, 1979 "Qualifications of Reactor Operators.
7. ANSI/ANS Standard 3.5-1979, "Nuclear Power Plant Simulators for Use in Operator Training."
8. Memorandum from S. J. Chilk to L. V. Gossick dated November 29, 1979.
9. Draft Standard ANS-3.5, "Nuclear Power Plant Simulators for Use in Operator Training," dated March 18, 1980.

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March 18, 1980

Mrs. M. D. Weber
American Nuclear Society
555 North Kensington Avenue
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Dear Mrs. Weber:

Attached is the revised simulator standard "Nuclear Power Plant Simulators for Use in Operator Training" revised 1980 to be submitted to NUPPSCO for ballot. The standard has been released by the ANS-3 Committee. Preliminary NUPPSCO comments have been incorporated in the proposed standard.

Sincerely,

N. S. ELLIOTT
ANS 3.5 Subcommittee
Chairman

NSE:hcv
cc: H. J. Green
J. S. Wiebe