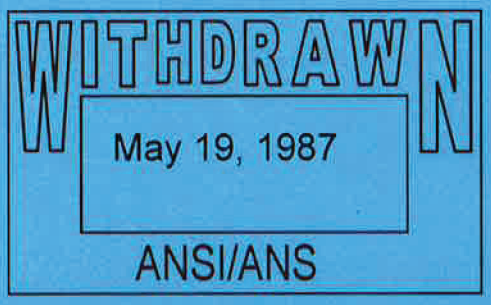
American Nuclear Society

selection, qualification, and training of personnel for nuclear power plants

an American National Standard



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ERRATA

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Page 4:

In subsection **4.2.3, Maintenance Manager,** second paragraph, third and fourth lines, the word "operations" was used incorrectly. The correct word is "maintenance."

It should read:

> b. Experience: At the time of commencement of preoperational testing or appointment to the position, whichever is later, the maintenance manager shall have four years of power plant experience of which two years shall be nuclear power plant experience. During the two years, the individual shall have participated in the maintenance section activities of an operating nuclear power plant during the following periods.

Page 14:

In subsection **5.3.5, Training for Non-Licensed Operators,** the last word in the second line should be "or" instead of "of."

It should read:

> **5.3.5 Training for Non-Licensed Operators.** Individuals permitted to operate systems or equipment independently that could affect the quality of structures, systems, and components important to safety shall receive instruction for tasks to be performed. These instructions shall include as a minimum:

American National Standard for Selection, Qualification and Training of Personnel for Nuclear Power Plants

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American National Standard

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Foreword

(This Foreword is not a part of American National Standard for Selection, Qualification and Training of Personnel for Nuclear Power Plants, ANSI/ANS-3.1-1981.)

The personnel of the operating organization who have the responsibility for the safe and efficient operation of a nuclear power plant throughout its operational lifetime must understand the complexities of the plant design and must be capable of properly manipulating the plant controls and maintaining and repairing the plant equipment.

The selection of the operating and support personnel for nuclear power plants and the training of these personnel to provide sound judgment, based on knowledge and experience of nuclear and power plant systems, are essential to the safe and successful operation of these plants.

This standard contains criteria for selection, qualification and training of nuclear power plant personnel. This standard was revised as required by procedures of the American National Standards Institute and updated to factor in lessons learned from the Three Mile Island Unit 2 incident as well as changing regulatory requirements. Major changes were made to several sections throughout the standard.

A new definition was added for startup testing and new plant positions and their associated experience requirements were added for Training Manager, Shift Supervisor, Senior Operator, Pre-Operational Testing Personnel, Start-Up Testing Personnel, Training Instructor, Shift Technical Advisor, Training Coordinator, Non-Licensed Operators, and Licensed Operators.

The Shift Technical Advisor's position is indicated as being a temporary operating staff position in this standard since Subcommittee ANS-3, Reactor Operations, believes that for the long term the line organization of shift management must be trained to fulfill this need. The STA is therefore considered to have a narrow scope of responsibility concentrating on plant transient analysis and response, recognition of degradation of safety system and core cooling parameters and advising the shift supervisor regarding corrective actions that should be taken to maintain core cooling and keep the plant in a safe condition.

A new paragraph was added to 3.1 requiring job overlap for personnel being replaced in the station organization. A major addition was made to 4.1 which provides guidance for the selection of those rare, exceptional individuals who have demonstrated outstanding management ability yet do not possess the formal education requirements specified in the standard. These individuals, however, have additional experience, training and education that is considered equivalent to that required to meet the qualifications of a particular position. Some colleges and universities now give nuclear power plant personnel college credits for many of the structured courses given in the plant training programs. These recognized college level courses provide an incentive for employees to pursue academic degrees and enhance their job qualifications.

The entire Section 5, Training, has been revised and more detailed guidance is provided for the plant training programs. The major revision consists of requiring task analysis as the basis for training programs. Several other changes have been made throughout this revision which are too numerous to describe in this foreword; therefore, the user should compare each section against the comparable section of ANSI/ANS-3.1-1978 to determine all of the detailed changes that have been made.

A revised appendix has been provided as an example of a typical Nuclear Regulatory Commission (NRC) approved licensed candidate training program.

Several issues were raised by the ANS Nuclear Power Plant Standards Committee (NUPPSCO) members that voted "negative" initially on this draft of the standard. In order to resolve these issues they were deferred for consideration and action to the next standard revision when more information will be available from work now under way at the Institute of Nuclear Power Operations (INPO) and within the utility industry on job task analysis. These analyses will have the potential to affect the education, experience and training requirements set forth in Sections 4, Qualifications, and 5, Training.

These issues were as follows:

1. Alternatives for educational requirements.
2. Differences in requirements for "hot" and "cold" license training.
3. Review of the collective qualification of the plant staff by work groups.
4. The need for and implementation of the team training concept, particularly in the operating organization.
5. The type of examinations that should be given following each training module in Section 5.
6. The need for interaction between NSSS suppliers and architect engineers during the course of training and retraining programs.

The membership of ANS-3, Reactor Operations, at the time of its approval of this standard was:

J. E. Smith, Chairman, *Duke Power Company*
G. C. Andognini, *Boston Edison Company*
S. E. Bryan, *U.S. Nuclear Regulatory Commission*
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W. T. Ullrich, *Peach Bottom Atomic Power Station*
G. K. Whitham, *Argonne National Laboratory*
P. Walzer, *Combustion Engineering, Inc.*

*F. A. Palmer served as director for the effort to produce this revision.

The American Nuclear Society's Nuclear Power Plant Standards Committee (NUPPSCO) had the following membership at the time of its approval of this standard.

J. F. Mallay, Chairman
M. D. Weber, Secretary

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	(for the Institute of Electrical and Electronics Engineers Inc.)
R. E. Allen (Alt.)	*United Engineers & Constructors, Inc.*
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