,319

March 28, 1985





UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

| | | |
|---|---|---|
| In the Matter of | ) | |
| | ) | |
| METROPOLITAN EDISON COMPANY | ) | Docket No. 50-289 SP |
| | ) | (Restart Remand on |
| | ) | Management - Training) |
| (Three Mile Island Nuclear Station, Unit No. 1) | ) | |

## LICENSEE'S COMMENTS ON COMMISSION POLICY STATEMENT ON TRAINING AND QUALIFICATION OF NUCLEAR POWER PLANT PERSONNEL

On March 20, 1985, the Licensing Board issued a Memorandum which forwarded to the parties the Commission Policy Statement on Training and Qualification of Nuclear Power Plant Personnel, dated March 14, 1985 ("Policy Statement"), and which provided to the parties an opportunity to comment on the effect the Policy Statement should have on the Board's partial initial decision on the training issue. Licensee takes this opportunity to provide its comments.

### Impact of Policy Statement, Generally

A Statement of Policy is an "announcement of what the agency seeks to establish as policy." Statement of Policy: Further Commission Guidance for Power Reactor Operating Licenses, CLI-18-16, 14 N.R.C. 14, 18 (1980) (Separate views of Chairman Ahearne and Commissioner Hendrie), citing Pacific Gas



DS03

& Electric Co. v. FPC, 506 F.2d 33, 38 (D.C. Cir. 1974). It is a "pronouncement which acts prospectively." Id., citing American Bus Ass'n v. U.S., 627 F.2d 525, 529 (D.C. Cir. 1980). Because general statements of policy are not subject to the notice and comment procedures of the Administrative Procedure Act, unlike a substantive rule, they are not "finally determinative" of the issues involved. Pacific Gas, supra, 506 F.2d at 38; see generally G. Edles, J. Nelson, Federal Regulatory Process: Agency Practices & Procedures (1984 Supp.) at 53. Consequently, a reviewing court can independently inquire into the merits of the issue. Guardian Federal Savings and Loan Association v. FSLIC, 589 F.2d 658, 664 (D.C. Cir. 1978); see generally Batteton v. Marshall, 648 F.2d 694 (D.C. Cir. 1980). But within the agency, the statement represents the position of the agency on the issue in question. See, e.g., Tennessee Valley Authority (Yellow Creek Nuclear Plant, Units 1 and 2), ALAB-515, 8 N.R.C. 702, 714 (1978) (application of NRC policy on implementation of Section 511 of FWPCA); Cincinnati Gas and Electric Co. (William H. Zimmer Nuclear Station), LBP-80-19, 12 N.R.C. 67, 70-71 (application of NRC policy on litigation of requirements beyond those covered in NUREG-0694).

NRC's Policy on Training

In its Policy Statement, the Commission unequivocally endorses the Institute of Nuclear Power Operations ("INPO") - managed Training Accreditation Program. Policy Statement at 1,

3. That Program applies to 10 utility training programs, including training programs for licensed operators. Id. at 4. Because the INPO accreditation process "encompasses the elements of performance-based training,"[1/] the Commission has determined that it "will provide the basis to ensure that personnel have qualifications commensurate with the performance requirements of their jobs." Id. at 1. Accordingly, for operating reactors, INPO accreditation "constitutes a method acceptable to the NRC for implementing performance-based training." Id. at 4.[2/]

Application of Policy Statement to TMI-1

The TMI-1 training program for licensed operators has been accredited by INPO. See letter from D. B. Bauser to the Licensing Board and the parties, March 4, 1985, with attached letter from Zack T. Pate, President of INPO, to Philip R. Clark, President of GPU Nuclear Corporation, dated February 28,

---

1/ The five elements of performance-based training considered essential to the Commission and which INPO requires of the training programs that it accredits are: (1) systematic analysis of the jobs to be performed; (2) learning objectives derived from the analysis which describe desired performance after training; (3) training design implementation based on the learning objectives; (4) evaluation of trainee mastery of the objectives during training; and (5) evaluation and revision of the training based on the performance of trained personnel in the job setting. Policy Statement at 3-4.

2/ The Commission's Policy is founded on the understanding that each licensee will exert best efforts to have all such programs ready for accreditation (i.e., final self-evaluation report submitted to INPO) by the end of 1986. Id. at 4. With respect to the TMI-1 licensed operator training program (as well as several other TMI-1 training programs), Licensee has more than satisfied this Commission expectation.

1985.3/ The Licensing Board should take official notice of this fact, which is indisputable. See id.4/

Once a training program is accredited, the Commission considers the program to be acceptably implemented. Policy Statement at 4. Accreditation therefore ought to constitute prima facie evidence of an adequate training program, shifting the burden to opposing parties to establish its inadequacies. Cf. Northern States Power Co. (Prairie Island Nuclear Generating Plant, Units 1 and 2), ALAB-244, 8 A.E.C. 857, 858 (1974); see also UCS Findings, ¶ 250 (UCS unable to resolve concerns in absence of "direct, independent evidence of the adequacy of

---

3/ Although the completion of the accreditation process post-dated the close of the evidentiary record in this case, Licensee's testimony described in detail the development of the TMI-1 licensed operator training program to conform to performance-based training standards and Licensee's involvement in the INPO accreditation process. See Knief & Leonard, ff. Tr. 33,364 (in entirety); Newton et al., ff. Tr. 32,409, at 65-68; Long & Coe, ff. Tr. 32,202, at 43; see Licensee's Findings, ¶¶ 209-211; see also Committee, ff. Tr. 31,749, at 10-11, 18-19; Tr. 33,330-31 (Gardner); Tr. 33,324-30 (Kimel, Christensen); Licensee's Findings, ¶¶ 255, 311-312.

4/ The Board is entitled to take official notice of the INPO accreditation of the TMI-1 training program. 10 C.F.R. Section 2.743(i)(1); Fed. R. Evid. 201. Section (b)(2) of Fed. R. Evid. 201, which states that a "judicially noticed fact must be one not subject to reasonable dispute in that it is . . . capable of accurate and ready determination by resort to sources whose accuracy cannot reasonably be questioned," applies to Licensee's letter notifying the Board of the INPO accreditation. (Of course, it cannot reasonably be expected that any of the parties would question the authenticity of the INPO accreditation letter.) Unquestionably, given Licensee's testimony on the INPO process and Licensee's stated expectation that accreditation would be forthcoming, see n.3, supra, the parties to the reopened proceeding had every opportunity during the proceeding to challenge the value or significance of the INPO accreditation which Licensee subsequently received on February 28, 1985. They did not do so.

Licensee's job-task analyses, and its implementation of the TSD model.").5/ The Board need not rely on this legal distinction, however, in view of the extensive evidence presented in the reopened hearing on training on the TMI-1 performance-based licensed operator training program. See Licensee's Findings, ¶¶ 97-223. The Board can confirm, on its own, the basis for Licensee's receipt of INPO accreditation.

In particular, the accreditation of the TMI-1 licensed operator training programs establishes INPO's confidence that the TMI-1 licensed operator training program satisfies the five elements of performance-based training that are necessary in order to obtain accreditation. See n.1, supra. These five elements are echoed in Licensee's TSD model, which is described in the testimony of Dr. Knief and Mr. Leonard. See Knief & Leonard, ff. Tr. 33,364, at 5. As the record reflects, licensed operator training at TMI-1 has been developed using the TSD model to ensure that the training is peformance-based. See id. at 5-13; Tr. 32,899-900 (Newton); Newton et al., ff. Tr. 32,409, at 29-31; see also Licensee's Findings, ¶¶ 100-102, 167.

Rather than repeat here the manner in which Licensee implements the five elements of the TSD model, Licensee notes:

---

5/ Arguably, now that the TMI-1 licensed operator training program has been accredited, its adequacy is not subject to challenge. For the Commission has decided, on a generic basis, that INPO accreditation of the licensed operator training program "will provide appropriately qualified personnel." Policy Statement at 6; cf., e.g., Cleveland Electric Illuminating Co. et al. (Perry Nuclear Power Plant, Units 1 & 2), LBP-82-69, 16 N.R.C. 751 (1982) (psychological stress policy limited Licensing Board jurisdiction).

Licensee's Findings, ¶¶ 106, 110, 114-115, address Licensee's systematic analysis of the job to be performed; Licensee's Findings, ¶ 103, address how learning objectives were derived from the analysis which describes desired performance after training (see, e.g., id., ¶ 45 (specification of learning objectives for BPTS); Licensee's Findings, ¶¶ 100, 105, address Licensee's training design and implementation based on the learning objectives (see, e.g., id., ¶¶ 74, 113, 176 (discussion of learning objectives contained in OPM); Licensee's Findings, ¶¶ 104, 112, 116, address Licensee's evaluation of trainee mastery of the objectives during training (see, e.g., id., ¶¶ 183-184 (examinations based on behavioral learning objectives)); and, Licensee's Findings, ¶¶ 108-109, and Licensee's Supplemental Reply Findings address evaluation and revision of the training based on the performance of trained personnel in the job setting (see, e.g., id., ¶ 73 (senior management evaluation of PSI training)).

Finally, Licensee notes that the phrasing of INPO's fifth element of a performance-based training program could be read to suggest that INPO might require periodic formal evaluations of routine operator performance in the control room. See UCS Proposed Findings, ¶¶ 283-287. Obviously this is not the case, since the TMI-1 operators are not so evaluated and the TMI-1 licensed operator training program has been accredited. In considering the significance of this possible disparity, the Board should consider several extra-record documents, which elaborate on element five. Cf. Pacific Gas and Electric Co.

(Diablo Canyon Nuclear Power Plant, Units 1 and 2) ALAB-775, 19 N.R.C. 1361, 1366-67 (1984) (reliance on extra-record documents when considering need to reopen a record).

The draft INPO accreditation team report, which was served on the Board and the parties on December 19, 1984, prior to the start of the evidentiary proceeding on training, addresses the issues of trainee and program evaluation. Accreditation Report (Nov. 26, 1984; second draft), at 16-18. In summary, the accreditation team found that, "Program specific procedures provide guidance for systematically evaluating and documenting the level of competence of the individual trainee in all types of training settings," noting written exams and quizzes, oral exams, performance tests and checkouts, and comprehensive final exams. Id. at 17. See generally Licensee's Findings, ¶¶ 124, 127-28, 134-36, 140, 142, 145-65, 183-94. It also found Licensee's methods for evaluating its training programs to be effective. These methods include use of end-of-course evaluations by trainees, plant supervisory input to training to identify strong and weak areas of training, external agency evaluations, examinations and audits, verbal feedback from plant and technical staff, industry event review, and training-plant interface meetings. Id. at 17-18; see generally Licensee's Supplemental Reply Findings at 7, 11-15.

Licensee also notes that in its discussion of the need systematically to evaluate training effectiveness, INPO's accreditation criteria focus on such things as the existence of regular program evaluations, training delivery, feedback,

change actions (e.g., industry events), and the initiation of improvements to training. See attached Accreditation Criteria (Jan. 1985) at A-27. INPO states as a criterion, "Feedback from trainee performance" after the operator assumes "duties for which he was trained." Id. As Licensee previously has stated, the duties on which feedback is necessary, from a training perspective, primarily are the duties performed at the simulator and during in-plant drills. These duties are continuously evaluated and the results integrated into the training program. See Licensee's Supplemental Reply Findings at 2-12. Supplementing these evaluations are the numerous communication channels between operations and training, as well as the other feedback mechanisms previously described by Licensee. See id. at 13-15. It is these elements in the training program which ensure that training addresses performance of the operator in the job setting "for which he was trained."

In conclusion, Licensee believes that the Commission's Policy Statement provides another compelling basis on which to conclude that the TMI-1 licensed operator training program is an effective, performance-based program.

Respectfully submitted,

Ernest L. Blake Jr.

Ernest L. Blake, Jr., P.C.
Deborah B. Bauser
John N. Nassikas III

SHAW, PITTMAN, POTTS & TROWBRIDGE
1800 M Street, N.W.
Washington, D.C. 20036
(202) 822-1000

Counsel for Licensee

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

| | | |
|---|---|---|
| In the Matter of | ) | |
| | ) | Docket No. 50-289 SP |
| METROPOLITAN EDISON COMPANY | ) | (Restart) |
| | ) | |
| (Three Mile Island Nuclear Station, Unit No. 1) | ) | |

CERTIFICATE OF SERVICE

I hereby certify that copies of "Licensee's Comments on Commission Policy Statement on Training and Qualification of Nuclear Power Plant Personnel", dated March 28, 1985, were served on those persons on the attached Service List by deposit in United States mail, postage prepaid, or where indicated by an asterisk (*) by hand delivery, this 28th day of March, 1985.

Respectfully submitted,

Ernest L. Blake, Jr., P.C.
Counsel for Licensee

DATED: March 28, 1985

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

| | | |
|---|---|---|
| In the Matter | ) | |
| | ) | |
| METROPOLITAN EDISON COMPANY | ) | Docket No. 50-289 SP |
| | ) | (Restart Remand on Management) |
| (Three Mile Island Nuclear Station, Unit No. 1) | ) | |

SERVICE LIST

Nunzio J. Palladino, Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Thomas M. Roberts, Commissioner
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

James K. Asselstine, Commissioner
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Frederick Bernthal, Commissioner
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Lando W. Zech Jr., Commissioner
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Administrative Judge
Gary J. Edles, Chairman
Atomic Safety & Licensing Appeal Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Administrative Judge
John H. Buck
Atomic Safety & Licensing Appeal Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Administrative Judge
Christine N. Kohl
Atomic Safety & Licensing Appeal Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

*Administrative Judge
Ivan W. Smith, Chairman
Atomic Safety & Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

*Administrative Judge
Sheldon J. Wolfe
Atomic Safety & Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

* Administrative Judge
Gustave A. Linenberger, Jr.
Atomic Safety & Licensing Board
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Docketing and Service Section (3)
Office of the Secretary
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Atomic Safety & Licensing Board
Panel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Atomic Safety & Licensing Appeal
Board Panel
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Jack R. Goldberg, Esq. (4)
Office of the Executive Legal
Director
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Thomas Y. Au, Esq.
Office of Chief Counsel
Department of Environmental
Resources
505 Executive House
P.O. Box 2357
Harrisburg, PA 17120

Mr. Henry D. Hukill
Vice President
GPU Nuclear Corporation
P.O. Box 480
Middletown, PA 17057

Mr. and Mrs. Norman Aamodt
200 North Church Street
Parkesburg, PA 19365

Ms. Louise Bradford
TMI ALERT
1011 Green Street
Harrisburg, PA 17102

Joanne Doroshow, Esquire
The Christic Institute
1324 North Capitol Street
Washington, D.C. 20002

Lynne Bernabei, Esq.
Government Accountability
Project
1555 Connecticut Avenue
Washington, D.C. 20036

Ellyn R. Weiss, Esq.
Harmon, Weiss & Jordan
2001 S Street, N.W., Suite 430
Washington, D.C. 20009

Michael F. McBride, Esq.
LeBoeuf, Lamb, Leiby & MacRae
1333 New Hampshire Avenue, N.W.
Suite 1100
Washington, D.C. 20036

Michael W. Maupin, Esq.
Hunton & Williams
707 East Main Street
P.O. Box 1535
Richmond, VA 23212

January 1985
Criteria
INPO 85-002

# The Accreditation of Training in the Nuclear Power Industry

INPO

# THE ACCREDITATION OF TRAINING IN THE NUCLEAR POWER INDUSTRY

## PROCEDURES AND CRITERIA

INPO 85-002

January 1985

THE INSTITUTE OF NUCLEAR POWER OPERATIONS

Plant Area: Training

Key Words: Accreditation, Criteria

# FOREWORD

The Institute of Nuclear Power Operations (INPO) was established by the nuclear power industry to assist in achieving excellence in the safety of nuclear power operations. The industry receives assistance from INPO in developing an adequate number of highly qualified, well-trained professionals to operate the nation's nuclear power plants. In the area of training, INPO develops training guidelines, evaluates the quality and effectiveness of utility training, and assists member utilities in developing performance-based training programs.

The evaluation of utility training involves accreditation and plant evaluations. The Accreditation Program is intended to systematically evaluate and subsequently improve the training process used in individual utility training programs. The Accreditation Program is complemented by INPO plant evaluations, which focus more directly on the performance of personnel in the plant, to ensure that training is producing the desired results and that plants are being safely operated. As programs are accredited, the thrust of the plant evaluations will shift even more toward evaluating the "product" of the accredited training programs.

INPO welcomes suggestions for changes to improve the accreditation process. It is anticipated that this document will be revised as INPO and member utilities gain experience in using these accreditation procedures and criteria.

This revision of the document, The Accreditation of Training in the Nuclear Power Industry includes minor changes in procedures and a restructuring and elaboration of the objectives and criteria reflecting lessons learned in the first two years of the program. It is effective immediately for planning, and on July 1, 1985, it formally supersedes the 1982 version of The Accreditation of Training in the Nuclear Power Industry (INPO 82-011).

TABLE OF CONTENTS

# THE ACCREDITATION PROGRAM

## General

The procedures, objectives, and criteria for the nuclear industry's Accreditation Program are described in this document. The purpose of the Accreditation Program is to assist INPO member utilities in developing training programs that will produce well-qualified, competent personnel to operate the nation's nuclear power plants.

INPO has been charged by and is responsible to its members for establishing training standards and assisting its members in achieving these standards. INPO's accrediting authority is derived from its members.

The accreditation of individual training programs provides the following advantages to the nuclear power industry as a whole:

- the establishment of a set of industrywide standards with which utilities can evaluate their training system and develop a plan of action

- the systematic evaluation of industry training programs by qualified peers resulting in subsequent improvement of industry training, as required, to meet the standards.

- the assurance and recognition that individual utility training programs, when accredited, meet prescribed standards established by INPO after significant industry input and review

Accreditation is granted to a utility for on-site, off-site, and contracted training for personnel at a specific plant site. The accreditation process encompasses all aspects of training (in or out of the plant) by all organizational units with some responsibility for training and qualification. Accreditation formally recognizes nuclear utility training as meeting the INPO accreditation objectives and criteria (See Appendix A) for the following training programs:

- o operations area
  - -- non-licensed operator training
  - -- reactor operator training
  - -- senior reactor operator/shift supervisor training

- o maintenance and technical support area
  - -- shift technical advisor training
  - -- instrument and control technician training
  - -- electrical maintenance personnel training
  - -- mechanical maintenance personnel training
  - -- chemistry technician training
  - -- radiological protection technician training
  - -- technical training for technical staff and managers

In the above listing, reactor operator training and senior reactor operator/ shift supervisor training are treated as separate programs. In the earlier version of the document, they were combined as licensed operator training. Requalification training is no longer listed as a separate program but is considered to be the continuing training for the reactor operator and senior reactor operator programs.

Normally, accreditation will be awarded only after the utility has conducted the training program; however, new training programs not yet conducted may be considered. Both initial and continuing training programs are evaluated for accreditation. As the first round of accreditation nears completion, INPO will review additional plant positions for possible future inclusion in accreditation.

The current utility commitment for operating plants or plants that loaded fuel prior to the end of 1984 is to have all programs ready for accreditation by the end of 1986. The goal for plants that load fuel in 1985 or later is to have all programs ready for accreditation within two years of fuel load. If additional training programs are added to the scope of accreditation, utilities will be expected to have these new programs ready for accreditation within two years after they are added. Operations area programs normally will be submitted first, but additional programs from the maintenance and technical

support area may be included in the initial self-evaluation at the discretion of the utility. Normally, at least three programs must be submitted for accreditation at any one time.

The process for accreditation of training consists of the following major activities:

- o self-evaluation conducted by the utility
- o team evaluation
- o decision by the INPO Accrediting Board
- o maintenance of accreditation

Utility Accreditation Self-Evaluation

The utility conducts the self-evaluation process by measuring its training system and programs against the INPO accreditation objectives and criteria, making necessary improvements, and preparing a report that will be used by the accreditation team. Throughout the accreditation process, an INPO accreditation staff member is assigned to assist the utility. The accreditation self-evaluation report is reviewed by INPO personnel, and if additional data are required, they are requested from the utility. If conditions are noted that would affect the accreditation schedule, they are identified to the utility. The self-evaluation phase ends when the formal self-evaluation report is sent to INPO (reporting that the program(s) are ready for accreditation). Normally, receipt of the accreditation self-evaluation report triggers the scheduling of a team visit. Further information concerning the self-evaluation process is found in Appendix B.

INPO Accreditation Team Evaluation

When the self-evaluation phase is completed, an accreditation team is appointed by INPO to visit the training site(s), including the plant site and contractor simulator training site when appropriate. The accreditation team consists of both INPO and utility personnel with collective expertise in nuclear power plant operating, nuclear utility training, instructional processes, and training evaluation. The team will include individuals who are technically competent in the positions corresponding to the training programs being evaluated and others who are expert in training processes. This team spends approximately five days on site. During the visit, members of the team

interview training and other plant personnel who are involved in training; observe training activities; examine facilities, equipment, and training materials; review instructor qualifications and procedures; and examine training program content and training records. The team evaluates how well the training programs meet each accreditation criterion. Its observations and concerns are discussed with plant and training management daily.

The team writes a report for the utility that describes training activities and contains conclusions and recommendations for improvement. If appropriate, a conference is scheduled to present and discuss the report prior to formal transmission of the report by INPO. The utility submits a written response to the report providing clarification or describing corrective actions taken. The response should be forwarded no later than three months after receipt of the team report. The accreditation team report and the utility's response are merged and submitted to the INPO Accrediting Board.

INPO Accrediting Board Decision

The final decision to award or defer accreditation is made by the INPO Accrediting Board. This decision is based on the accreditation team's report, the utility's response, and the INPO staff recommendation. The utility's representatives are present to answer questions and describe the current status of programs to the Accrediting Board prior to the Board's deliberations. When accreditation is awarded, it will normally remain in effect for four years, at which time the accreditation process is repeated. If accreditation is deferred, the affected training program(s) will be considered deferred until the Board can meet to review the program(s) and the additional actions taken by the utility.

The INPO Accrediting Board consists of five members: two persons from INPO member utilities, one person from a non-nuclear industrial training organization, one person from the post-secondary education community, and one person recommended by the Nuclear Regulatory Commission. Alternate members are selected to facilitate the scheduling of meetings.

Maintaining Accreditation

Accreditation is maintained during the accreditation period by the utility submitting a status report to INPO for review by the Accrediting Board at the end of two years. This biennial report describes changes in the accredited training programs since the last accreditation review and discusses the utility's status with respect to possible ongoing actions committed to and in response to the INPO Accrediting Board.

The report should provide specific information with appropriate documentation regarding actions taken during the two-year period. The reports should be brief but should include the following:

- the status of any open actions related to an earlier accreditation report
- a description of any major changes in training since the last accreditation review
- a description of any other activities that have had a bearing on the effectiveness of the accredited training programs
- a report on organizational changes that may affect the training programs (include an updated training staff roster)
- a status report on those programs not yet accredited indicating any change to anticipated schedule
- a description of the principal strengths and weaknesses of training determined through program evaluations
- an assessment of the benefits and/or disadvantages derived from training modifications made in connection with accreditation, including any discernable impact on licensing examination results
- recommendations for changes in the accreditation process

# APPENDIX A

# OBJECTIVES AND CRITERIA FOR ACCREDITATION

TABLE OF CONTENTS

## INTRODUCTION

INPO establishes the accreditation objectives and criteria against which nuclear utility training is evaluated to determine its readiness for accreditation. Training programs are evaluated against the accreditation objectives and criteria by utility personnel during the self-evaluation process, by accreditation team members while performing their on-site evaluations, and by the Accrediting Board during its review. To obtain accreditation, a utility must demonstrate that its training meets the accreditation objectives and criteria.

The accreditation objectives describe the expected end results of an effective, well-managed training program. The criteria are principles or methods that support the accreditation objectives and are to be applied with judgment. The expectation is that all criteria will be met; however, if the objective is met, it is not essential that all criteria be fully met. Also, some objectives and criteria will not be applicable to some programs. This situation would prevail when, for example, a particular instructional method such as laboratory training is not used.

This version of the objectives and criteria is primarily an elaboration and restructuring of those previously published. They reflect, however, the same criteria that were applied in awarding accreditation to all accredited programs to date. Extensive industry input into the development of this revision has been obtained.

## ORGANIZATION AND MANAGEMENT OF THE TRAINING SYSTEM

Objective

1. The utility is organized, staffed, and managed to facilitate planning, directing, evaluating, and controlling a systematic training process that fulfills job-related training needs.

Criteria

1.1 The actions needed to achieve high quality, job-related, performance-based training programs eligible for accreditation have been identified through a systematic evaluation of existing programs.

1.2 Written corporate and plant goals establish the required character and quality of key aspects of the training system. Supporting objectives are implemented at each organizational level.

1.3 The responsibilities and authority of personnel involved in managing, supervising, and implementing training are clearly defined in writing and permit effective control of the training process.

1.4 A training system is implemented as the primary management tool for developing, conducting, and evaluating training.

1.5 Procedures are implemented to ensure that instructional activities can be conducted reliably and consistently.

1.6 Training to be completed prior to qualification is clearly defined. Exemptions from training may be granted when justified and supported by a documented assessment of prior training and experience.

1.7 Training records are maintained to support management information needs and provide required historical data.

1.8 Programs offered under contract remain under the control of the sponsoring utility and are evaluated by it to ensure that the INPO accreditation objectives and criteria are met.

1.9 The work load of the training staff indicates that there are sufficient qualified personnel to accomplish assigned duties and responsibilities.

## DEVELOPMENT AND QUALIFICATION OF STAFF FOR TRAINING DUTIES

Objective

2. Training staff (utility and contracted, if used) possess the technical knowledge, the experience, and the developmental and instructional skills required to fulfill their assigned duties.

Criteria

2.1 Training staff responsible for program management, supervision, and development have and maintain the education, experience, and technical qualifications required for their jobs.

2.2 Instructor technical qualifications are appropriate for the subject matter that they are assigned to teach.

2.3 Developmental and instructional qualifications of instructors include theory, practical knowledge, and work experience in developing, conducting, and evaluating training, as appropriate to their job assignments.

2.4 Methods are implemented to ensure that individual instructors meet and maintain position qualification requirements.

2.5 When instructors have not yet attained the required instructional qualifications or only instruct occasionally, training quality is maintained through appropriate additional assistance and supervision.

2.6 The instructional skills training program develops the necessary instructor capabilities to fulfill training program requirements.

2.7 Instructor performance is evaluated regularly, and the results are used to improve performance.

2.8 Continuing instructor development efforts maintain, improve, and advance required knowledge and skills and are based, in part, on evaluations of instructor performance.

## SUPPORT OF TRAINING WITH FACILITIES, EQUIPMENT, AND MATERIALS

Objective

3. The training facilities, equipment, and materials adequately support training activities.

Criteria

3.1 Instructional facilities meet training needs.

3.2 The training staff has necessary instructional aids and equipment.

3.3 Technical reference materials, including current plant procedures and drawings, are readily available to the trainees and instructors.

## CONDUCT OF JOB ANALYSIS AND IDENTIFICATION OF TASKS FOR TRAINING

### Objective

4. The tasks required for competent job performance are identified, documented, and included in the training programs, as appropriate.

### Criteria

4.1 Plant personnel, training staff, and other subject matter experts, as appropriate and as needed, have conducted a job analysis to develop a valid plant-specific task list.

4.2 Subject matter experts (appropriate plant technical personnel, training staff personnel, or knowledgeable outside personnel) assist in the selection of tasks for training.

4.3 Each task selected for training from the plant-specific task list is compared with existing training materials in sufficient depth to determine if existing training adequately supports task performance.

4.4 The plant-specific list of tasks selected for training and the comparison to training materials is reviewed periodically and updated, as necessary.

## ESTABLISHMENT OF TRAINING PROGRAM CONTENT

### Objective

5. Training program content provides the trainee with the knowledge and skills needed to perform functions associated with the position for which training is being conducted. The content of initial training prepares the trainee to perform the job for which he is being trained. The content of continuing training maintains and improves incumbent job performance.

### Criteria

5.1 INPO training guidelines are used as a guide for selecting, sequencing, and verifying training program structure and content.

5.2 Tasks are analyzed, as necessary, to determine the task's supporting skills and knowledge to be included in training programs.

5.3 Personnel qualified in the position for which training is being conducted help determine training content and confirm its completeness.

5.4 Current plant procedures and other technical and professional references are used to identify training content and plant-specific information for use in developing training materials.

5.5 Initial training program content is modified to reflect the results of program review and evaluation by plant and training staff personnel.

5.6 The results of trainee and program evaluations are used to help determine the content of continuing training.

## DEVELOPMENT OF LEARNING OBJECTIVES AS THE BASIS FOR TRAINING

Objective

6. Learning objectives that identify training content and define satisfactory trainee performance are derived from job performance requirements.

Criteria

6.1 Expected entry-level skill, knowledge, and experience are considered when developing learning objectives.

6.2 Learning objectives are derived from an analysis of job performance requirements and are the basis for trainee evaluation.

6.3 Learning objectives state the action(s) the trainee must demonstrate, the conditions under which the action will take place, and the standards of performance the trainee should achieve upon completion of the training activity.

6.4 Learning objectives are grouped by similar training setting (for example, classroom and simulator).

6.5 Learning objectives are sequenced based on their relationship to one another and help trainees move from one level of skill and knowledge to another.

## ORGANIZATION OF INSTRUCTION USING LESSON PLANS AND OTHER TRAINING GUIDES

Objective

7. Lesson plans or other training guides provide guidance and structure to ensure the consistent conduct of training activities.

Criteria

7.1 Lesson plans for classroom instruction provide for effective, consistent class presentations.

7.2 Lesson plans or equivalent training guides are used for laboratory training, on-the-job training (OJT), and simulator training and include criteria for evaluating proper trainee performance.

7.3 Lesson plans and other training materials are developed or modified using learning objectives derived from job performance requirements.

## CONDUCT OF CLASSROOM AND INDIVIDUALIZED INSTRUCTION AND TRAINEE EVALUATION

### Objective

8. Classroom and individualized instruction is effectively presented, and trainee performance is routinely and consistently evaluated.

### Criteria

8.1 Training is implemented as outlined by approved training materials and is well-organized and current.

8.2 Training activities encourage direct trainee participation in the learning process.

8.3 Instructors prepare adequately to ensure effective and consistent delivery.

8.4 The instructor uses instructional techniques appropriate to the lesson content and learning objectives.

8.5 When individualized instruction is used, either the training materials contain the information to be learned or referenced texts are readily available.

8.6 Trainee mastery of learning objectives is evaluated regularly using written and/or oral examinations and quizzes.

8.7 Written and oral examinations and quizzes are administered and graded in a consistent manner.

8.8 Acceptance criteria to be used during the administration of oral examinations are defined in advance of the examination.

8.9 Contracted training is evaluated to ensure that trainees are achieving the specified learning objectives as measured by appropriate written and oral examinations and quizzes.

## CONDUCT OF IN-PLANT TRAINING AND TRAINEE EVALUATION

Objective

9. In-plant training or on-the-job training (OJT) is effectively presented, and trainee performance is evaluated consistently.

Criteria

9.1 In-plant training is delivered using well-organized and current training materials.

9.2 Designated personnel who are instructed in program standards and methods conduct in-plant training.

9.3 When the actual task cannot be performed but is simulated or walked-through, the conditions of task performance, references, tools, and equipment reflect the actual task to the extent possible.

9.4 Performance evaluations use established criteria.

9.5 Acceptance criteria to be used during the administration of oral examinations are defined in advance of the examination.

## CONDUCT OF SIMULATOR TRAINING AND TRAINEE EVALUATION

### Objective

10. Simulator training is effectively presented, and trainee performance is evaluated consistently.

### Criteria

10.1 An appropriate simulator is used for hands-on training, to demonstrate operational characteristics, and for recognition and control of normal, abnormal, and emergency plant conditions. Differences between the simulator and the plant are accommodated in the training sessions.

10.2 The training program content is implemented as outlined by approved training materials and is well-organized and current. Requests for contracted training should specify the required objectives and content.

10.3 Instructors prepare adequately for simulator sessions to ensure effective and consistent training. Requests for contracted training should require vendor instructors to be familiar with differences between the referenced plant and trainees' home plant.

10.4 The instructor uses instructional techniques appropriate to the situation.

10.5 Individual trainee and team performance are evaluated regularly against established learning objectives using appropriate evaluation methods and performance criteria.

10.6 Contracted training is evaluated to ensure that trainees are achieving the specified learning objectives, as measured by appropriate evaluation methods and performance criteria.

## CONDUCT OF LABORATORY TRAINING AND TRAINEE EVALUATION

### Objective

11. Laboratory training is effectively presented, and trainee performance is evaluated consistently.

### Criteria

11.1 The training program content is implemented as outlined by approved training materials and is well-organized, current, and structured to provide practical experience.

11.2 Conditions of task performance, references, tools, and equipment reflect the actual job to the extent possible.

11.3 Training activities encourage direct trainee participation in the learning process.

11.4 Instructors prepare adequately to ensure effective and consistent delivery of the material.

11.5 The instructor uses instructional techniques appropriate to the situation.

11.6 Trainee performance is evaluated regularly against established learning objectives using appropriate evaluation methods and performance criteria.

11.7 Contracted training is evaluated to ensure that trainees are achieving the specified learning objectives, as measured by appropriate evaluation methods and performance criteria.

## SYSTEMATIC EVALUATION OF TRAINING EFFECTIVENESS

### Objective

12. A systematic evaluation of training effectiveness and its relation to on-the-job performance is used to ensure that the training program conveys all required skills and knowledges.

### Criteria

12.1 Program evaluations are conducted on a regular basis by qualified individuals.

12.2 Training delivery is monitored and evaluated with regard to instruction, materials, and instructor performance.

12.3 Feedback from trainee performance during training is used to evaluate and refine the training program.

12.4 Feedback from trainee performance, after the trainee has assumed the duties for which he was trained, is used to evaluate and refine the training program.

12.5 Change actions (e.g., procedure changes, industry events, equipment changes) are monitored and evaluated for their applicability to the development or modification of training programs and are incorporated in a timely manner.

12.6 Improvements and changes to training are initiated and tracked to correct training deficiencies and performance problems.

12.7 Contracted training is evaluated for its contribution to meeting job performance requirements and to ensure that its quality is consistent with utility training standards.

# APPENDIX B

# ACCREDITATION SELF-EVALUATION PROCESS

# AND REPORT GUIDELINE

## ACCREDITATION SELF-EVALUATION PROCESS AND REPORT GUIDELINE

The accreditation self-evaluation process is used by a utility to measure its training against INPO accreditation objectives and criteria.

The purposes of the self-evaluation are as follows:

- o to permit the utility to evaluate its training against accreditation standards and identify and carry out needed action to correct any weaknesses

- o to provide a framework for action plans and resource requirement estimates

- o to serve as a basis for an accreditation self-evaluation report that is used in conjunction with accreditation team visits

### Conducting The Accreditation Self-Evaluation

Conducting the self-evaluation is a team effort requiring proper planning and preparation. Before beginning the self-evaluation, all participants in the training process should be informed of the INPO accreditation process and briefed on their roles in the self-evaluation. INPO conducts workshops on self-evaluation and provides assistance in initiating the process.

It is important at this stage that a utility and its plant(s) commit to a thorough and very critical self-evaluation. When conducting the self-evaluation, current training programs and activities should be compared to the INPO accreditation objectives and criteria using Appendix A. Training conducted by the utility (on-site and off-site), as well as that conducted by contractors, should be reviewed. The in-plant training conducted by functional units is usually a major part of a training program and should be reviewed as thoroughly as the training unit's activities. While conducting the self-evaluation, the strengths and weaknesses of the utility's training should be identified and documented for internal planning purposes. Solutions and action plans should be developed for the problems that are identified.

Some problems may be significant enough to preclude the effective accomplishment of job performance-based training. These should be corrected prior to forwarding a formal accreditation self-evaluation report to INPO. In some cases, an identified problem may mean that an objective or essential criterion is not fully met and improvement is needed. This improvement action should be identified under the appropriate criterion in the accreditation self-evaluation report. Questions about the category in which a problem falls should be addressed to the INPO accreditation staff. Once INPO receives the formal accreditation self-evaluation report, a team visit may be scheduled within a few weeks.

## Preparing The Accreditation Self-Evaluation Report

The recommended format for the accreditation self-evaluation report has been revised from the previous document to match the accreditation objectives and criteria. The accreditation self-evaluation report, using the new format, should address each program separately and completely. Each program report should be bound separately. In preparing the accreditation self-evaluation report for each program, the utility should address each pertinent objective and each supporting criterion with statements and with documentation, where appropriate.

Two copies of each accreditation self-evaluation report are to be sent by the utility to INPO addressed to the Vice President and Director, Training and Education Division.

## Self-Evaluation Report Format

The following guidance is offered for preparation of the accreditation self-evaluation report:

- Complete a cover page for each program report using the suggested cover page format on Page B-5 as a guide.

- The cover page should be followed by a table of contents.

- The body of the report should begin with an "Introduction" that addresses the following points, as appropriate:
  - Briefly describe the training program covered by this report. Use a time-line, bar chart, or curriculum sequence to describe the program phases and time spent in each phase.

  - Describe the organizational elements responsible for various training phases and for qualification.

  - If applicable, describe any special or unique arrangements or circumstances that are not covered elsewhere in this report.

- Following the "Introduction," the organization of the report should follow the numbering system of the objectives and criteria. A narrative response should be written for each criterion in sufficient detail to permit the reader to understand how each criterion is met. The narrative should be supplemented with references to appended materials, as appropriate. A general report format and key points to consider when responding to the first objective, "Organization and Management of the Training System" and each supporting criterion, are presented on pages B-7 through B-9 as examples. These examples should be used as guides for report formatting and for estimating the depth to which responses should go for this and for other objectives.

- When one section of the accreditation self-evaluation report is equally applicable to more than one program, it should be written once, titled to show all programs to which it applies, and pages should be numbered and reproduced for all of the reports. Page numbers should consist of the single letter designation for the program (listed below), the objective number, and the page number within that objective (e.g., N-1-1). When a page or a section of a report is applicable to more than one program, the page number should begin with the letter designation for each program (e.g., NRS-1-1). Single letter designations for the various programs are as follows:
  - A - shift technical advisor training
  - C - chemistry technician training

-- E - electrical maintenance personnel training
-- H - radiological protection technician training
-- I - instrument and control technician training
-- M - mechanical maintenance personnel training
-- N - non-licensed operator training
-- R - reactor operator training
-- S - senior reactor operator/shift supervisor training
-- T - technical training for technical staff and managers

o Using the directions and "Roster of Training Staff" found on pages B-10 through B-11, complete a roster for all training staff that directly support the training program covered by this report.

(SUGGESTED COVER PAGE)

ACCREDITATION SELF-EVALUATION REPORT

_____
(Program)

Utility: _____

Plant: _____

Location: _____

Person at utility to be contacted if questions arise concerning this questionnaire:

Name and title: _____

Address: _____

_____

Telephone: (  ) _____

Date of report: _____

(EXAMPLE)

## ORGANIZATION AND MANAGEMENT OF THE TRAINING SYSTEM

Objective

1. The utility is organized, staffed, and managed to facilitate planning, directing, evaluating, and controlling a systematic training process that fulfills job-related training needs.

Criteria

1.1 The actions needed to achieve high quality, job-related, performance-based training programs eligible for accreditation have been identified through a systematic evaluation of existing programs.

Suggested Response

Provide a brief description of the evaluation process used to determine systematically the status of existing training programs when compared to the INPO accreditation objectives and criteria.

Criteria

1.2 Written corporate and plant goals establish the required character and quality of key aspects of the training system. Supporting objectives are implemented at each organizational level.

Suggested Response

Attach a copy of current corporate and plant goals and supporting objectives that pertain to training. Describe how the goals and objectives are implemented and how accomplishment is measured.

Criteria

1.3 The responsibilities and authority of personnel involved in managing, supervising, and implementing training are clearly defined in writing and permit effective control of the training process.

Suggested Response

Attach a copy of organization charts that show how the training organization(s) fit(s) into the utility's organizational structure and a copy of position descriptions/guides and/or other documents that describe the responsibilities and authority of all site personnel involved in managing, supervising, and implementing training. If necessary, provide a narrative to amplify the attachments.

Criteria

1.4 A training system is implemented as the primary management tool for developing, conducting, and evaluating training.

Suggested Response

Provide a description of the training system model that is implemented as the primary management tool for developing, conducting, and evaluating all training functions.

Criteria

1.5 Procedures are implemented to ensure that instructional activities can be conducted reliably and consistently.

Suggested Response

Attach a copy of current training procedures pertinent to this report. If necessary, provide a narrative to amplify the attachments.

Criteria

1.6 Training to be completed prior to qualification is clearly defined. Exemptions from training may be granted when justified and supported by a documented assessment of prior training and experience.

Suggested Response

Provide a brief description of the training that is to be completed prior to qualification for the position for which the trainee is being prepared, as well as a description of the criteria and procedures used to grant exemptions from training.

Criteria

1.7 Training records are maintained to support management information needs and provide required historical data.

Suggested Response

Attach a sample training program and trainee record. If necessary, provide a narrative to amplify the attachments.

Criteria

1.8 Programs offered under contract remain under the control of the sponsoring utility and are evaluated by it to ensure that the INPO accreditation objectives and criteria are met.

Suggested Response

Provide a brief description of the methods/procedures for approving, monitoring, and controlling contracted training. Attach forms, reports, and responses that illustrate control and monitoring of contracted training.

Criteria

1.9 The work load of the training staff indicates that there are sufficient qualified personnel to accomplish assigned duties and responsibilities.

Suggested Response

Provide a brief description of the method or procedure used to determine training staff size and to establish work load standards. Identify any authorized positions that are vacant.

## ROSTER OF TRAINING STAFF

Directions: Complete the attached roster for all training personnel. Each utility training site should have a separate roster. In completing the roster, refer to the following:

- o Name and position title - Use titles descriptive of the individual's primary function (example, "instrument technician instructor" rather than "training specialist").

- o Program subjects - List the training programs or portions of programs that the individual is qualified to teach.

- o Hours per week conducting training - Report the approximate average number of hours per week over the past 12 months during which the individual presented instruction or worked directly with trainees.

- o Years of education and fields of study - Report the number of years of formal education (i.e., high school, technical school, and college). For any part-time college study, report equivalent academic years. Report the areas of specialization for any post-secondary education.

- o Related technical training - Report formal training programs completed.

- o Instructional skills training - Report formal training programs completed.

- o Years of instructional experience - Report work experience as an instructor.

- o Years of work experience related to training areas - Report work experience in a technical field closely related to the area(s) in which the individual provides training, not including time as a trainer, and date of most recent industry experience.

- o Other qualifications - Report other technical qualifications related to the area(s) in which the individual provides training. Include NRC licenses and utility certifications.

ROSTER OF TRAINING STAFF

| Name and position title (indicate if part-time) | Programs/subjects in which qualified to provide training | Average hours/week conducting training | Years of education/ fields of study |
|---|---|---|---|
| | | | |
| Related technical training | Instructional skills training | Years of work experience related to training areas | Other qualifi-cations |
| | | | |

# APPENDIX C

# DEFINITIONS

## DEFINITIONS

The definitions given below are for the purpose of this document.

Accreditation - A process to recognize formally and approve nuclear utility training as meeting established criteria.

Accreditation Team - A group of individuals representing INPO with collective expertise in nuclear power plant operations, nuclear utility training, instructional processes, and training evaluation. This team reviews the utility's self-evaluation report, visits training sites, evaluates training, and prepares a report of its conclusions and recommendations.

Accreditation Self-Evaluation - An evaluation of utility training programs measured against the accreditation criteria, conducted by the utility, and described in a written report.

Accrediting Board - A group of individuals collectively having expertise in nuclear power plant operations, nuclear and non-nuclear industrial training, instructional processes, and educational accreditation. This board is responsible for making the decision to award or defer accreditation.

Individualized Instruction - A method of instruction in which the pace of training is controlled by the trainee and guided by the program materials.

Job Analysis - A method used in obtaining a detailed listing of the duties and tasks of a specific job.

Learning Objective - A statement that specifies measurable behavior that a trainee should exhibit after instruction, including the conditions and standards for performance.

Lesson Plan - An instructor's primary training document that outlines instructor and trainee activities, the learning objectives, and the resources necessary for the conduct of training.

On-the-Job Training (OJT) or In-Plant Training - A training setting in which trainees achieve learning objectives through structured training conducted in the job environment.

Performance-Based Instruction - A systematic program of instruction designed around tasks and the related knowledge and skills required for competent job performance.

Qualifications - The combination of an individual's physical attributes and technical, academic, and supervisory knowledge and skills developed through training, education, and demonstrated on-the-job performance.

Task - A well-defined unit of work having an identifiable beginning and end and two or more elements.

Task Analysis - The systematic process of examining a task to identify required skills or knowledge.

Training - Instruction designed to develop or improve on-the-job performance of a trainee or worker.

Training Organization - A utility organizational unit that provides technical training and/or is responsible for ensuring the quality of the training.

Training Program - A planned, organized sequence of activities designed to prepare individuals to perform their jobs and meet a specific position or classification need.

Training Setting - The environment in which training is conducted and learning occurs. Training settings include classroom, laboratory and workshop, formal on-the-job training, simulator, and individualized instruction.

Training Site - The location at which training programs are conducted for nuclear utility personnel.

Training System - A set of interrelated activities used to methodically establish and maintain performance-based training (for example, Training System Development, Instructional System Development, and Systematic Approach to Training).

INPO is partially supported by assistance from the Tennessee Valley Authority (TVA), a Federal agency. Under Title VI of the Civil Rights Act of 1964 and applicable TVA regulations, no person shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under this program. If you feel you have been excluded from participation in, denied the benefits of, or otherwise subjected to discrimination under this program on the grounds of race, color, or national origin, you or your representative, have the right to file a written complaint with TVA not later than 90 days from the day of the alleged discrimination. The complaint should be sent to: Tennessee Valley Authority, Office of Equal Employment Opportunity, 400 Commerce Avenue, EPB 14, Knoxville, Tennessee 37902. The applicable TVA regulations appear in Part 1302 of Title 18 of the Code of Federal Regulations. A copy of the regulations may be obtained on request by writing TVA at the address given above.

Printed in U.S.A.