

PILGRIM NUCLEAR POWER STATION
EMERGENCY OPERATING PROCEDURES (EOPs)
TRAINING PROGRAM
SUMMARY DESCRIPTION

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EMERGENCY OPERATING PROCEDURES (EOP) - TRAINING PROGRAM

General

The EOP Training Program has been developed with the guidance of existing regulations and guidelines. Among the major guidelines considered include NUREG-0899, Guidelines for the Preparation of Emergency Operating Procedures; INPO 85-002, the Accreditation of Training in the Nuclear Power Industry; and INPO 86-026, Guidelines for Simulator Training. The program has also benefited immensely from the BWROG - EPG development program and its seminars and training sessions.

The goals of the EOP Training Program are to enable the operator to:

- Understand the structure and technical bases of the EOP.
- Develop a working knowledge of the EOPs.
- Use the EOPs under adverse operating conditions.

The following description outlines the approach Boston Edison uses to train current and new licensed operators and STAs on EOPs, and to ensure that they are kept proficient and knowledgeable about future revisions to EOPs.

PROGRAM DESCRIPTION

Participation

All current operators, and Shift Technical Advisors (STAs) receive EOP training prior to EOP implementation. Current operators and STAs receive EOP training as a component of required Requalification Training. New operators and new STAs are to receive this training during licensing or STA qualification training.

Replacement operators - who hold inactive licenses, also maintain their qualification by successfully participating in Requalification Training. They receive the same EOP training as operators with active licenses.

No replacement operator is allowed to perform licensed duties until he/she meets all the requirements for an active license and completes EOP training.

Program Content

EOP training for current, new and replacement operators and STAs consists of two weeks (80 hours) of combined classroom, simulator and walk-through training.

In the classroom, lectures are supplemented with questions and answers and table-top exercises. The content is based on both Appendix B to the BWROG Emergency Procedure Guidelines (Rev. #4), "Detailed Discussion of Cautions and Operator Actions" and on human factors considerations used in the formatting of the EOPs as presented in the Pilgrim Nuclear Power Station (PNPS) Writer's Guide.

The training approach and content have been specifically tailored to PNPS and includes the following:

- The bases for new EOPs.
- How to read EOPs.
- The bases for all cautions.
- How to use EOPs.

Additionally, the classroom trains on roles and responsibilities and communication skills. The table-top exercises allow crews to work-through each EOP step and resolve misinterpretations under controlled-stress conditions. Regularly scheduled homework assignments are provided to supplement the classroom presentations. Written and oral quizzes are utilized to test retention of this material.

The simulator segment of this training comprises approximately 50% of the training time. On Boston Edison's PNPS-Specific Simulator, crews exercise the EOPs under operating conditions. Each scenario develops technical skills, EOP management techniques, crew management, team and communication skills. Because of the importance of communication and teamwork, these receive as much emphasis as technical competence in each scenario.

The simulator scenarios are designed to be as realistic as possible. The scenarios build expertise by starting with simple, singular failures and building to multiple simultaneous and sequential failures.

Appropriate repetition of EOPs is provided to increase retention and avoid negative transfer. Retention is improved through coaching, feedback and critiques of performance conducted by both instructors and crews. Video taping of crews may be used in critiquing performance to enhance analysis of events and actions.

Walk-throughs are used in situations where steps have been sufficiently exercised, or when constrained by simulator or plant controls. Walk-throughs and simulation training focus on improving operator ability to use EOPs, operator responsibility, information flow and interaction between operators in the control room.

Simulations and walk-throughs are conducted with operators performing as crews in their normal control room positions, to the maximum extent possible. To ensure the Watch Engineer's ability in using EOPs, he/she alternates as the Nuclear Operating Supervisor (NOS) in implementing EOPs during training. This role alternation allows both the NOS and Watch Engineer to become proficient in using EOPs. As time allows, Reactor Operators are given an opportunity to rotate into or assist the NOS.

Evaluation

Throughout the course, crew progress toward reaching established performance standards are continually monitored. The results are used to diagnose the strengths and weaknesses of crews and individuals. As needed, training is adjusted to meet the needs identified. Monitoring includes daily written quizzes and continual observations of exercise performance, including a numerical tracking of communication errors during scenarios. Operator performance during each simulator exercise is documented via scenario evaluation forms. Both individual and team performance are measured and evaluated against the established performance standards.

At the completion of training, all trainee active personnel undergo an EOP certification process. Using the performance standards, team and individual performance are observed and measured. To attain certification, crews must prove technical competence and meet communication skills criteria. Prior to performing licensed duties, all inactive personnel are likewise certified.

REQUALIFICATION

Maintaining Proficiency

Proficiency in EOPs is maintained through required Requalification Training and by periodic in-plant observations and critiques of communication skills as well as case studies or questions related to EOP use. At a minimum, four hours of each Requalification Training week are devoted to EOP review. This review consists of both classroom and simulator components. In this manner, all EOPs and any revisions to the EOPs are reviewed during the course of a retraining cycle.

Revision

EOPs are controlled procedures. Revision to them is evaluated by the NUORG Procedure Review process. The Training Department participates in this review and selects appropriate training, as necessary. Requalification Training is used to train on major revisions and crews receive training on minor revisions through on-watch staffing led by the Watch Engineer or designee. Should major revisions be required, crews receive this training prior to implementation of the EOP.

Changes made for Requalification Training are incorporated in initial license or qualification training through the regular curricular control path used by training. Only controlled procedures are used in training.