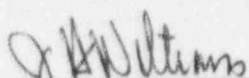


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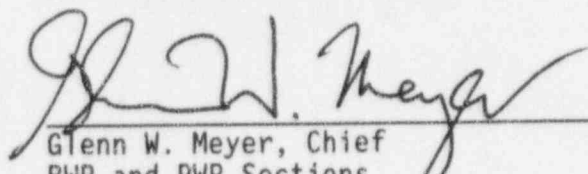
DOCKET/REPORT NO: 50-293/95-17  
LICENSEE: Boston Edison Company (BECo)  
FACILITY: Pilgrim Nuclear Power Station  
Plymouth, Massachusetts  
DATES: August 21-25, 1995  
INSPECTORS: J. H. Williams, Senior Operations Engineer  
J. G. Caruso, Operations Engineer

INSPECTORS:

  
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J. H. Williams, Sr Operations Engineer  
BWR Section  
Division of Reactor Safety

9/13/95  
Date

APPROVED BY:

  
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Glenn W. Meyer, Chief  
BWR and PWR Sections  
Division of Reactor Safety

9/13/95  
Date

**INSPECTION SUMMARY**  
**Report No. 50-293/95-17**

Two inspectors evaluated the Pilgrim licensed operator requalification training (LORT) program. The fifth week of BECo's 1995 requalification examination cycle was observed and assessed.

**Operations**

The inspectors judged the Pilgrim LORT program to be good overall. BECo operations and training management were closely involved in requalification training administration, including revisions and enhancements to the program. The LORT program was effectively revised to stay current with the needs of the operators. The program satisfied the requirements of 10 CFR 55.59 for the areas reviewed.

Operator feedback was formally documented, summarized, evaluated and generally addressed promptly by the training staff.

Crew and individual evaluations were effective in identifying positive and negative performance. Examination debriefs for individuals were excellent and involved extensive, substantive discussions between the individual and the evaluator. The significance of the feedback was reinforced by having active participation by both operations and training management.

Remedial training provided was effective in addressing individual needs when operator performance did not meet expectations.

It was noted that some training sessions were excused for staff licensed individuals who missed the training. The LORT program should to be clearly defined by BECo and followed by all NRC-licensed individuals.

The program for maintaining an active license was found to have good controls and implementation.

The inspectors judged the oversight by operations and training managers to be particularly effective and a strength of the requalification program.

The EOP support procedures have received validation to meet the current procedural controls. This open item (93-01-02) is closed.

## DETAILS

### 1.0 BACKGROUND AND SCOPE

During the week of August 21, 1995, the NRC conducted a performance-based inspection of the Pilgrim licensed operator requalification training (LORT) program using NRC Inspection Procedure 71001, "Licensed Operator Requalification Program Evaluation." The purpose of this inspection was to evaluate the Pilgrim licensed operator requalification training program with respect to 10 CFR 55 requirements, and to assess the effectiveness of the training.

Prior to the on-site inspection, the inspectors reviewed plant information, NRC inspection reports, LERs, SALPs, and NRC information notices to see if special training was appropriate based on industry events, operator performance or plant modifications.

The inspection involved a review of the annual operating tests and observation of operator and evaluator performance during the conduct of simulator scenarios and job performance measures. Interviews with licensed operators, training instructors, and supervisory personnel were conducted. Administrative procedures and documents associated with the training program and its implementation were reviewed.

A review and assessment of the effectiveness of the training feedback process, remedial training program and management oversight were conducted. The inspectors also assessed conformance with license conditions associated with medical requirements, maintaining an active license, and participating in the requalification training program.

In addition to Inspection Procedure 71001 and NUREG-1021, "Operator Licensing Examiner Standards," Revision 7, the inspectors used the Pilgrim administrative procedures as a basis for determining the adequacy of the BECo operator examination process.

### 2.0 FINDINGS

#### 2.1 Annual Operating Examinations

##### General

The sampling plan and the annual operating examinations were reviewed for congruency and found to be acceptable. Plant modifications had been appropriately factored into the training program. The format for the simulator scenarios and JPMs were generally found to be good in providing detailed cues and guidance to the evaluators and simulator operator.

##### Simulator

Simulator scenarios met the guidelines used by the NRC and BECo; however, the scenarios had some relatively simple critical tasks. For example, initiating alternate rod insertion (ARI) during an ATWS. Also, the two scenarios contained a total of only five critical tasks and when one critical task was not used, a third unplanned scenario had to be run.

The EPIC computer did not model critical parameters very well and was not used by the operators during the simulator exams. No other deficiencies were noted. In discussions with the operators, none of the operators identified simulator fidelity problems and all thought the simulator modelled the plant as well as could be determined. Several operators noted that the plant had not operated like the simulator with respect to accidents; and, therefore, fidelity was hard to judge. BECo indicated that the simulator computer was at its capacity limit, and plans were underway to upgrade the simulator computer.

### **Job Performance Measures (JPM)**

Like the scenarios, the JPMs met the guidelines and were generally acceptable evaluation tools, but had room for improvement. For example, no SRO-specific JPMs were used. BECo indicated that the only SRO-type JPMs they had were for emergency classifications and had chosen not to use them. Also, the use of faulted and more time critical JPMs could have strengthened the annual operating examination.

The inspectors noted that several of the JPMs used a second person (the evaluator) to role play independently verifying certain actions in the JPM. Plant procedures call for a second person to verify certain actions. The inspectors noted that, while this practice makes the JPM follow the procedure, it reduces the effectiveness of the JPM as a test instrument, since the second person would prevent the operator from making critical errors. For example, the inspectors noted that one operator performing LOJPM-81, "Bypassing MSIV Low-Low RPV Water Level Isolation Interlock," had difficulty identifying the proper jumper locations. Without the second person (in this case the evaluator) he would not have completed the JPM satisfactorily.

Assignment of critical steps in JPMs was not always consistent. For example, locating a specific hydraulic control unit (HCU) was critical, but locating correct relays or contracts was not critical.

The inspectors noted that not all evaluators used the standard format for beginning the JPM. The initiating cue in LOJPM-69 is "Complete Section 7.2 Step [1] of 8.5.1.1 and then perform Section 8.1 for 'A' CS pump quarterly flowrate test." One evaluator reviewed the procedure and covered more information than given in the initiating cue.

The JPM format at Pilgrim has the evaluator tell the operator when the JPM is complete. This is not standard practice. Normally, the operator tells the evaluator when the task is completed. When performing the in-plant JPMs, the operator called the control room upon task completion, which clearly indicated he was finished; however, in the simulator, the evaluator sometimes stopped the JPM before the operator appeared finished.

### **Evaluation**

Although there were some individual weaknesses, the crew performed well. Command and control was good. Crew communications were formal and effective. The evaluators asked objective, in-depth questions after the simulator scenario was completed to clarify operator actions and reached appropriate

conclusions. BECo evaluators noted a generic weakness in locating and responding to alarms. However, the annunciator system was a recent plant modification and the operators had not had much time on the simulator because of the recent extended outage.

The inspectors observed the examination debriefs held with each individual operator and concluded that the debriefs were excellent. The discussions were detailed, thorough, and provided the operators excellent feedback on their performance strengths and weaknesses. The debriefs were conducted with each operator by their evaluator, the chief operating engineer (COE), and the operations training manager. The COE communicated operations management's expectations with regard to performance. Discussions were open and frank. Communications were two way, and the operators appeared receptive to the comments. The operators were also asked for feedback concerning possible improvements to the program.

The inspectors noted that BECo does not presently formally document performance for individuals and crew in the weekly simulator evaluations. However, guidelines have been developed to specify that the mentor document simulator performance each week. The mentor program is scheduled to begin in the near future.

### Examination Security

The inspectors reviewed operating tests for two other weeks to determine if test items were repeated excessively. No problems were identified. The examination security measures employed by BECo for test materials and operator controls were acceptable.

### 2.2 Operator Feedback

The inspectors reviewed the method by which operators fed back recommended training program enhancements to the training staff. The operator feedback records were reviewed and the inspectors concluded training and operations management were effectively addressing and resolving operator feedback.

The inspectors reviewed the feedback records for the training conducted since the last NRC program inspection. The inspectors found feedback was formally documented, summarized, and evaluated, and corrective actions were assigned when the operations training committee deemed corrective actions necessary. An effort was made to address and disposition all comments. The training department was also providing to the operators the resolution to their comments during the following training session. The operators in interviews indicated that they were satisfied with management's responsiveness to their concerns.

The inspectors noted a number of training comments throughout the training cycle that were related to classroom crowding and difficulties during simulator training sessions due to attendance of staff licenses (during classroom and simulator sessions) and license certifications (during classroom sessions only since simulator training is not required for license certifications). Apparently, an attempt had been made to schedule these

individuals in advance, but the problems seemed to occur when the normally scheduled training was missed and the staff licenses and certifications showed up for makeup sessions. After the inspection, the plant manager issued a memorandum emphasizing the importance of attending scheduled LORT classes.

In addition, the inspectors noted that not all outstanding items were tracked to completion when the action of a group outside of operations or training was needed to correct the problem. For example, student feedback from session #10 (dated November 25, 1994) identified the need for improved guidance provided in emergency response procedures EPIP-IP-300 and 400 (e.g., guidance provided for manually calculating dose assessments), which involved procedure changes that were not being tracked by the training department. At the time, the training department had initiated a change request, but had not entered this item into their tracking system to ensure actions were completed. The training department did followup during the inspection and confirmed that draft changes were being developed and corrective actions were scheduled to complete before the end of the year.

### 2.3 Remedial Training

The inspectors reviewed the program requirements and actions taken by BECo when operator performance does not meet expectations and concluded that the programmatic controls and the remedial training conducted were generally effective in addressing individual needs. For example, one operator had failed to meet minimum acceptable standards during the dynamic simulator portion of the 1994 annual requalification examination. The operator was given an accelerated training program followed by another examination, during which the operator demonstrated unacceptable performance and was removed from the program and his license was revoked.

A second operator failed the biennial written examination administered in 1994 and was given an accelerated training program followed by another written examination, which the operator completed satisfactorily. This operator then failed the next two weekly classroom quizzes administered, and his performance was again reviewed by a trainee status review team per the guidelines established in Procedure T-16 (Student Counseling). The inspectors noted that the remediation provided after the failure of the biennial exam focused primarily on remediating those weaknesses identified in the failed examination but did not attempt to capture weaknesses exhibited in earlier tests taken by the individual. The inspectors questioned whether the remedial training administered was sufficiently broad-based. The inspectors were told by the operations training manager, that BECo is planning to implement a mentor program in the near future, which should more effectively address individual and crew weaknesses. Guidelines for the mentor program have been drafted.

The inspectors reviewed performance on weekly quizzes. Four individuals, who had less than acceptable performance on weekly quizzes, had their performance reviewed and were counseled by BECo training management. In addition, two of these individuals received a formal review of their performance by a training review team that was led by representatives from both operations and training management. The inspectors concluded that these measures to review and evaluate less than acceptable performance were a positive initiative.

## 2.4 Conformance to License Conditions

### Active License

The inspectors reviewed the program for maintaining an active license and for meeting the requirements of 10 CFR 55.53. The facility procedure, 1.3.34, "Conduct of Operations," Section 6.4, described the program. The procedure was acceptable and provided good guidance for meeting 10 CFR 55.53.

The inspectors reviewed records for operators maintaining an active license while off-shift. In addition, the records were reviewed for three individuals that reactivated their license from an inactive status in the past year, and no deficiencies were identified.

### Medical

The inspectors reviewed a sample of ten licensed operator medical files to ensure that medical examinations were being conducted biennially. The inspectors determined that physical examinations were performed biennially as required by 10 CFR 55.21 with no identified weaknesses.

### Participation in Licensed Operator Requalification Training (LORT)

Licensed operators are required by Part 55.59 to participate in the NRC approved LORT program. The licensed operator must attend training sessions to participate in the LORT program.

Attendance records were reviewed for the current two year training cycle, and it was noted that a number of simulator and classroom training sessions were excused for certain staff licensed individuals who missed the training. For example, several individuals missed training geared to prepare operators for upcoming evolutions (e.g., loss of shutdown cooling during mid-cycle outage 10 in the simulator and classroom). The reason for missing the training provided by the training staff was that these were staff licensees and the makeup would have been given past the time when the training would be most useful. A number of operators were also excused from radiological (ALERT) and cardiopulmonary resuscitation (CPR) training. The inspectors noted that the LORT program should be clearly defined. Whether staff or nonstaff-licensed operators, they should fully participate in the SAT-based program.

## 2.5 Management Oversight

The inspectors reviewed management oversight and involvement in the LORT program and concluded that management was effectively involved in a number of ways.

There are a number of managers with NRC senior operator licenses at Pilgrim. These managers participate in the LORT program and provide constructive evaluations and feedback to the program.

Senior operations management has taken up the task of teaching the LORT sessions on plant status updates to emphasize the importance of this topic.

The COE is directly involved in weekly simulator training, as well as the annual operating tests. The inspectors noted that, at various times during the year, other senior managers had observed and evaluated simulator training. Operators noted during the interviews that they see managers in the simulator often.

The managers in training and operations meet often and appeared to have a good working relationship.

The inspectors noted that management was actively seeking out ways to improve the LORT program. For example, the development of the mentor program was a result of this activity.

Management has provided the operators with clearly defined standards of performance and has insisted that the standards are met; the operators acknowledged this during the interviews.

## 2.6 PREVIOUS INSPECTION FINDINGS

(CLOSED) Unresolved Item (293/93-01-02): The review, revision and approval process for EOP support procedures is not at the same level as that of the EOPs.

Inspection Report 94-10 reviewed this open item and noted that it remained open pending: (1) issuance of EOP support procedures that had been validated to meet procedural requirements; and (2) NESD review of the EOP support procedures. The inspectors verified that these actions had been completed. This item is closed.

## 3.0 CONCLUSIONS

3.1 Annual operating examinations could have been more challenging; however, they met BECo and NRC guidelines. Operator performance was generally good on the examinations. The BECo evaluators and the evaluation process were effective.

3.2 LORT program feedback from operators and managers was effective. Classroom and simulator training sessions were often crowded due to attendance problems of licensed or certified staff.

3.3 Remedial training was appropriate. Documentation of weekly evaluations of individual performance could provide a broader base to assess remedial training needs. The mentor program that is planned should provide this information.

3.4 Conformance to license conditions was good, in general, but better control over participation in the LORT program is warranted.

3.5 Management oversight is a strength.

3.6 The open item (93-01-02) associated with the EOP support procedures was closed.



#### 4.0 EXIT MEETING

An exit meeting was conducted on August 25, 1995, during which the NRC inspectors reviewed the scope and findings of the inspection. Inspection findings had been discussed with training and operations management throughout the week. Persons attending the exit meeting are listed below:

##### **Boston Edison Company**

T. Sullivan	Plant Manager
J. Alexander	Training Manager
T. Trepanier	Operations Support Manager
W. DiCroce	Chief Operating Engineer
T. Swan	Operation Training Manager
R. Cannon	Senior Compliance Engineer
R. Markovich	Regulatory Affairs and Emergency Preparedness Department Manager
A. Shiever	Regulatory Affairs Division Manager
T. Beneduci	Nuclear Computer Applications Division Manager
C. Goddard	NSD Manager
M. Williams	Senior Quality Assurance Engineer
b. Joy	LORT Program Coordinator
B. Combs	LORT Instructor
M. Briggs	Principal Instructor

##### **Nuclear Regulatory Commission**

R. Laura	Senior Resident Inspector
B. Korona	Resident Inspector
B. Cook	Senior Resident Inspector, Vermont Yankee
J. Caruso	Operations Engineer
J. Williams	Senior Operations Engineer