



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
831 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

February 6, 1987

MEMORANDUM FOR: Gregory C. Cwalina, Acting Chief
Maintenance and Training Branch
Division of Human Factors Technology

Stewart D. Ebner, Director
Division of Reactor Safety, Region I

THRU: Lee H. Bettenhausen, Chief
Operations Branch, Division of Reactor Safety, Region I *JHJ, fn*
2/6/87

P.K. Eapen, Chief
Quality Assurance Section, OB
Division of Reactor Safety, Region I

FROM: William Oliveira, Reactor Engineer
Quality Assurance Section, OB
Division of Reactor Safety, Region I

SUBJECT: OBSERVATION OF INPO ACCREDITATION TEAM VISIT AT
THE BOSTON EDISON COMPANY, PILGRIM NUCLEAR POWER STATION

INTRODUCTION

During the week of December 1-5, 1986, I was an observer during the INPO Accreditation Team Evaluation of six training programs at Boston Edison Company (BECO), Pilgrim Nuclear Power Station. The programs that were evaluated in accordance with Revision 1 of INPO Criteria 85-002 were:

- Shift Technical Advisor (STA)
- Chemistry Technician (Chemtech)
- Electrical Maintenance (Elec)
- Instrument and Control (I&C)
- Mechanical Maintenance (Mech)
- Technical Staff and Managers (TS&M)

The training and orientation session for Peer Evaluators was conducted on Monday morning. (See attached list of Accreditation Team members, including Peer Evaluators.) The Team Manager (TM) and TM (in training) reviewed the week's agenda. The team members were reminded that although BECO had submitted their SERs some time ago they would find new information to evaluate and the programs still had to meet the objectives and criteria for accreditation. The TM and his assistants reviewed interview and other data gathering techniques.

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The formal entry meeting was held later on Monday morning. As in previous Evaluation Team visits, the TM introduced team members. He reminded utility personnel that the NRC observer was watching the accreditation process, not the utility. He also gave a brief outline of the role of the team members, the Accreditation Board, and the process for tracking open items. BECo management gave a candid synopsis of their problems associated with the public and the NRC, as well as being "off line" since April 1986. The Training Management gave a status report of their accreditation effort.

THE ACCREDITATION PROCESS

The process was the same as that described in previous trip reports. The process and program groups met with their respective leaders each afternoon prior to a combined group meeting. Open items, questions, and concerns discussed at these meetings were communicated to utility personnel each morning. The TM met with the Station Manager on Wednesday to brief him on the accreditation effort and to discuss his views and plans for training.

During the visit the team exhibited flexibility and team work. For example the electrical and mechanical evaluators worked together since most of their questions and attributes from the check lists were similar and addressed to the same individuals. Likewise the process and content evaluators worked together to minimize duplication of effort. These evaluators agreed they benefitted from the combined effort. As expected the TM and Assistant TMs were working with the peer evaluators. This was especially helpful to new evaluators to assure that the requirements were adequately addressed. This assistance was evident when the I&C program peer evaluator found potential deficiencies early in the week and the TM worked with the evaluator to assure his concerns and examples were presented to the Training Management as early as practical.

The Senior INPO Management Representative met with each peer evaluator on Thursday afternoon to review their progress and present constructive criticisms. On Friday the Senior INPO Management Representative opened the exit critique by commending the licensee personnel for their cooperation and assistance. He then turned the meeting over to the TMs for their formal presentation of the conclusions drawn during the inspection. The Senior INPO Management Representative closed the meeting by discussing the latest news and policies regarding accreditation and training. He also initiated a discussion with BECo management regarding severe accidents such as Chernobyl. BECo management replied that Pilgrim has been evaluating severe accidents. One example presented by BECo concerned their actions in modifying the containment.

INTERVIEWS

I observed individual interviews both at the Training Center and at the Station. The evaluators conducted thorough interviews in accordance with INPO checklists. Most of the evaluators had craft experience and effectively communicated with the training instructors, management and station staff personnel. The evaluators were very cooperative in discussing their interview

results with me. In one interview a plant staff supervisor stated that though his personnel have been receiving excellent hands on training in the laboratories, he will still insist that they be qualified by performing on-the-job-training (OJT) using an actual work request and procedure. In another interview the evaluator was able to provide references to help a supervisor resolve a problem with a new system being installed. This was an example of the evaluator having a working knowledge of the discipline he was evaluating.

CLASS OBSERVATION

I observed a class in the "Principles of Level Transmitters" with the evaluator as part of his examination of the contents of the I&C program. As the class progressed the evaluator used his copy of the lesson plan to assure it was followed. At the conclusion the instructor gave a short test on the subject covered. While the test was in progress the instructor explained the mockups that were to be used for demonstrating the principles of the subject to the evaluator and me. Another class I attended was a combination of classroom and laboratory exercises for disassembly and assembly of centrifugal pumps. In this class the students were electrical and mechanical journeymen. The mechanical evaluator interviewed a student and the instructor separately in accordance with his checklist. Both individuals interviewed thought the training was excellent.

RESULTS

At the conclusion of the evaluation the INPO evaluation team communicated the following strengths and weaknesses to the licensee with respect to the programs evaluated:

STRENGTHS

- OJT modules and checklists in the electrical and mechanical areas were complete and noteworthy.
- 240 hour continuing training for chemtechs is customized for their specific needs.
- Instructors observed in laboratory exercises did an excellent job.
- Program Evaluation Committees have performed well.
- Station staff is supportive of training.

WEAKNESSES

- A formal Training Organization is not in place. Responsibilities are not defined and delineated.

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- Program descriptions have not been processed for the Chemtech, I&C and TS&M training.
- The same examinations are used for successive classes for initial Elec, Mech and Chemtech training, and possibly in I&C since only one examination was available for inspection.
- Past history was not considered in developing the STA and Chemtech training programs.
- A training program task analysis does not include emergency and abnormal events.
- A TS&M program has not been developed or implemented. The program also lacks specific lesson plans and learning objectives, feedback of the effectiveness of the lesson plans used and training for junior or entry level engineers.
- No task is designated as performance only in the qualification checklists for Chemtechs, Elec, Mech and I&C personnel.
- Sequence of system training during the Level III (special training) phase is questioned for Elec, Mech and I&C training programs.
- I&C training program requires that:
 - Lesson plans be developed,
 - Learning objectives include knowledge requirements and their content be based on analysis,
 - QJT checklists be tested and implemented,
 - Feedback evaluation be considered in continuing training,
 - What training is required to fully qualify personnel must be defined.

CONCLUSIONS

- The INPO team affectively achieved their objective of evaluating the licensee's training program in accordance with INPO criteria 85-002, "The Accreditation of Training in the Nuclear Power Industry (Procedures and Criteria)
- The team and peer evaluators performed their evaluations in accordance with the formal assigned responsibilities forwarded in advance of the visit. The assigned responsibility contained guidelines, checklists and methods for reporting of the results to assure the evaluations are thorough, uniform and objective.

- The team of professionals from different disciplines and with different personalities, all were determined to help the licensee succeed. This is a credit to the INPD team concept and leadership.
- The licensee also recognized and appreciated their help.
- The only suggestion I offered was that the evaluators visit the Station staff at their work site and observe them performing their tasks. When the opportunity arrives, then interview them about their training.



William Oliveira, Reactor Engineer
Quality Assurance Section, OB
Division of Reactor Safety, Region I

Enclosure: Areas of Responsibility

AREAS OF RESPONSIBILITY
Pilgrim Accreditation Team Visit
December 1-5, 1986

TEAM MEMBERS

Assignment

Ashley Erwin

Team Manager

Dan Garner

Team Manager (In Training)

TEAM I

Geoff Edelman

TMA - Systems Review

Del Benzaquin

Organization & Management/Resources and
Facilities (Peer/Evaluator - Carolina Power
and Light Company)

Al Hickman

Training Staff and Training Program
Effectiveness (Peer Evaluator - Detroit
Edison Company)

Ed O'Neil

I&C, Mechanical & Electrical Maintenance
Process (Peer Evaluator - Florida Power &
Light Company)

TEAM II

George Hutcherson

TMA - Program Review & Chemistry Process

Dave Stump

TMA - Program Review (In Training)

Eric Shatz

Mechanical Maintenance Content (Peer
Evaluator - Tennessee Valley Authority)

Ted Gray

I&C Content (Peer Evaluator - Pacific Gas &
Electric Company)

Morrison Jackson (E&A)

Chemistry Content

Ron Thurow

STA Content & Process

Rick D'Arezzo

Technical Staff and Manager Program

OBSERVER

Walter Coakley

INPO Accreditation Division Director
(Thursday noon to Friday, 10:30)

William Oliveira

NRC Reactor Engineer, QA Section, Operations
Branch, Division of Reactor Safety, RI (All
week)