



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

DEC 29 1987

MEMORANDUM FOR: William F. Kane, Chairman  
Peach Bottom Restart Panel

FROM: Julius J. Persensky, Section Chief  
Human Factors Assessment Branch  
Division of Licensee Performance  
and Quality Evaluation, NRR

SUBJECT: INTERIM INSPECTION REPORT ON OPERATOR REHABILITATION  
TRAINING PROGRAM

During the week of September 21-25, 1987, Julius J. Persensky, Dolores Morisseau, and Isabelle Schoenfeld participated in an inspection at Peach Bottom Nuclear Power Plant with James Linville, Charles Marschall, and Thomas Kenny from Region 1. The purpose of the inspection was to observe part of the "People - The Foundation of Excellence" (PFE) training program, to interview (1) some of the operators who had completed the first cycle of the training program, (2) individuals responsible for development of that program, and (3) individuals who were responsible for selection of operators to participate in the program. Thus, the staff interviewed 6 operators who had completed the training course and three operators who have not yet participated in the training program, personnel from the Management Analysis Company (MAC) who were part of the diagnostic team called in by Philadelphia Electric (PECo) after the shutdown order, two psychologists from Rohrer, Hibler, and Replogle (RHR) who conducted individual assessments of operations staff personnel prior to and after the PFE training program, and the Plant Manager. In addition, the staff heard a presentation by the Peach Bottom Training Department Coordinator and the MAC individual responsible for the development and implementation of the training program. On October 15 and 16, Ms. Morisseau and Mr. Linville observed a similar training program designed for shift managers.

It should be noted that this can only be characterized as an interim report because of the limited number of observations and interviews possible at the time of the inspection. It would therefore be premature to present final conclusions at this time. The final report will be submitted after the utility has indicated that all training, including crew team training, is complete and the review team has interviewed a sample of operators and shift managers who have been through the entire training program. Following are the staff's observations based on the inspection activities performed.

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### Interview with Management Analysis Company (MAC)

The staff interviewed Mr. Howard Lamb, consultant for the Management Analysis Company (MAC), who was part of the diagnostic team at Peach Bottom. Mr. Lamb stated that he had minimal involvement with the PFE training program, and that questions specific to that area should be addressed to David Callahan, who is a consultant to MAC working at Peach Bottom.

The staff directed the remainder of its questions to the method used to conduct the diagnostic. The MAC team was brought in after the shutdown order to verify whether a problem actually existed. The team interviewed the GE engineers, and the Shift Technical Advisers (STAs) who were in the control room at various times throughout the period addressed in the shutdown order. These initial interviews determined that a problem did exist. The MAC team informed Philadelphia Electric that the problem encompassed a series of issues, including management of the plant.

At that point, the diagnostic team broadened the scope of its analysis at the direction of PECO. Through asking a wide variety of questions, the team identified a number of consistent patterns. Mr. Lamb stated that they worked from "an emergent basis," rather than from a preconceived idea.

The staff had previously reviewed the protocols used by the diagnostic team for their interviews with operators, STAs, and managers. The questions were appropriate to the target population, and to the situation. However, the interview with Mr. Lamb revealed that the interview responses were not recorded on an individual basis but rather in the aggregate. Essentially, the interview with Mr. Lamb confirmed the conclusions of the MAC report, dated June 17, 1987.

*I don't doubt the inspectors but find it hard to believe that a management consultant wouldn't take notes of each interview - especially if prepared questions were used in the interviews!*

RHR Interviews The staff interviewed Drs. Tepper and Tufts of Rohrer, Hibler, and Replogle (RHR). They were part of a five-person team who were charged with making an assessment of individual operators to determine their trainability and openness to the PFE training program. The RHR personnel worked with MAC regarding the components of the program before it was started and during the time it was conducted. RHR found the material well organized although they had some initial concerns about integration of the modules and the large amount of material to be covered.

Individuals were interviewed prior to the PFE program by RHR two-person teams. Although the interviews were apparently comprehensive (2-3 hours each), the report that was generated discussing individuals was a working report only and was not available to PECO or the NRC. RHR then met with PECO and gave a verbal assessment of the group of 15 operators who would participate in the first session of the PFE training program.

The RHR interviews as described were clinical and lengthy. RHR characterized the group prior to training as:

- a depressed, powerless, angry, humiliated and victimized group who didn't think they were doing wrong.
- practical as opposed to theoretical.
- open, candid, and forthright.
- sheltered, narrow, parochial and naive.
- loyal to the organization, their profession and the company while having mixed feelings about the seniority system and needing support and someone to listen to them.
- products of a fossil culture (as opposed to other nuclear facilities RHR has been involved in) with a lack of urgency and attention to detail.

The interview teams used a short standardized reasoning instrument that tests problem solving ability. The staff requested a copy of the instrument as well as the relevant normative data, but has not yet received it. The RHR team met with the whole group two weeks into the first session and gave them insights gathered from the interviews. At the completion of the program, each participant was given a review of his strengths and areas that need further attention. This whole process is being repeated with the second group.

*We still have not received it. I'm going to suggest to the Region that we ask for it formally.*

The RHR consultants were also part of the process for selecting candidates for shift managers. These candidates were interviewed and given developmental feedback. In addition, RHR will have some input into the selection of operating teams for the control room. However, their criteria for selection are not available.

A written summary report was prepared by RHR that discussed the participants, as a group, at the completion of the first session. Drs. Tufts and Tepper stated that there were between four and five individuals in that session who may not have gotten enough out of the program; RHR has discussed this with the Plant Manager. They indicated that this may also be true of the second group. They also stated they would like to continue to see these operations people on a quarterly basis as part of a long-term followup program.

*Do they have any? I think we should formally ask for that.*

Presentation "People - The Foundation of Excellence" (PFE) Course

*They did not identify the indiv.*

The staff had previously requested additional information on the decision-making process involved in designing the PFE training course. The MAC consultant and the PECO Training Coordinator who were responsible for the development and delivery of the PFE course reviewed the process for the NRC staff. They indicated that the training development process consisted of four stages:

1. Needs Analysis Stage

- ° interviews with management
- ° evaluation of MAC interviews previously conducted for the "Problem Root Cause Assessment of the Peach Bottom Shutdown"
- ° interviews with operations personnel to determine how they viewed their job, their attitude toward NRC and INPO, and their role vis a vis management

2. Design Stage

- ° development of goal statements and objectives and sequencing of course activities

3. Development Stage

- ° selection of activities, lesson plans, behavior observations and criteria development

#### 4. Course Evaluation Stage

- ° feedback from participants via a course evaluation form and video-tapes used throughout the course
- ° long term evaluation
  - discussions between the participants and facilitators 4-6 months after training
  - on the job observation of the participants by the Shift Manager, the Superintendent of Operations and the Engineer-Operations

The training course was designed to focus on effective communication, teamwork and an understanding of interpersonal processes involved in control room operations. It was noted that operators were required to pass the course prior to returning to shift, and that the criteria for failing the course were disruptive behavior or sleeping in class. According to the presenters, operators had taken responsibility for previous unacceptable behavior, and were aware of PECO policies via the employee handbook. The presenters also said that the operators knew the rules but didn't choose to follow them.

Concerning assurance of transfer of learning from the training course to the work place, the presenters indicated that the participants were asked daily to describe the application of this learning to control room activities. In addition, recently developed position guides and issues such as shift rotation and discipline were addressed in conjunction with related course topics. However, the following areas, which were recommended in the MAC report for inclusion in an operator retraining program or were in the CTE Action Plan, were not directly addressed in the training program but may have been informally communicated as a byproduct of the main focus:

- ° an understanding of the traditional PECO culture and Peach Bottom subculture and its negative effects on safe nuclear plant operations
- ° operator responsiveness to, and positive attitude toward, the level of detail and attention required for safe professional control room operations, e.g., exception reporting, systems monitoring, etc.
- ° \* emphasis that the operator's responsibility is to actively operate the plant and that the safety systems are in place to back up the operator, and

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\* While the staff generally agrees with this area of concern, the NRC position is that the role of the operator is an interactive one whereby he or she takes actions to correct developing problems prior to safety system actuation.

- ° an understanding and acceptance of all of the roles in the safe and efficient operation of a nuclear generating station, e.g., operations, QA/QC, health physics, maintenance, etc.

### Training Observations

The staff observed training at various times throughout the inspection. One portion of the schedule was devoted to a question-and-answer session with the Plant Manager. This group not only addressed the issues designated as "save for management" that were generated by the first class but also those agreed on by the class being observed. Issues developed by the two classes included clarification of policies (e.g. control room access, overtime and vacation policy, following procedures, amount of latitude for unintentional mistakes); establishment of new processes (e.g. two-way communication, career paths, closing the gap between Peach Bottom and PECO personnel concerning professional activities and benefits, performance evaluation and feedback); and management attitude (e.g. "insensitive" remarks by Plant Manager, letter of reprimand).

Another segment of class time was spent discussing the potential changes at Peach Bottom and the participants' willingness and ability to accept them. The discussion was carried out in small groups. There was an assignment related to a presentation on how to request action from others. Finally, staff observed the part of the schedule devoted to a summary by one of the facilitators of training Units 1, 2, and 3, i.e., "information about yourself," "awareness", and "group dynamics" and a class segment focussing on "goal setting" and "achieving results".

During classroom sessions the operators were instructed in the different roles human behavior takes in a multitude of situations. These sessions have been designed to improve skills and abilities associated with effective communications, positive attitude and team building.

During group sessions the participants interacted with each other to demonstrate the instructions given during the classroom phase in order to evaluate behavior under stressful conditions. These sessions were video taped and group discussions were held to evaluate the interactions. During some sessions the class interacted with upper management in order to provide input and dialogue to management on concerns about such issues as overtime, shift rotation and procedures.

The operators seemed enthusiastic and did participate positively. Discussions with the training personnel indicated that the operators were benefiting from the course with a more positive attitude and better team participation.

*however, the objectives didn't include  
everything not thought appropriate.*

The staff's observations and MAC's trainee feedback forms confirmed that the PFE course met its objectives. In general, the course was oriented toward building the communications skills necessary to efficiently deal with other operators on shift, and other personnel encountered in the control room environment. The training observations also support the staff's findings as stated in the previous section concerning the presentation on the PFE course, i.e., very little was included which related specifically to issues such as inattentiveness to duty or the previous and current company policies with respect to discipline and control room conduct.

Shift Managers' Training Observation - October 15-16, 1987

Although the content of the training for shift managers was similar to that given to operators, there appeared to be more emphasis on relating new communication skills and insights to plant operations. This was reinforced by including senior managers from all Peach Bottom functional support groups, i.e., Health Physics, I&C, Maintenance. This group attended the morning sessions of the training and participated in the exercises.

One exercise, the "Win as Much As You Can" game, is designed to demonstrate the value of collaboration and trust. A great deal of discussion followed this exercise. The participants were quick to see that the generally poor outcome of this group related to their past interactions in their daily work situation at Peach Bottom. All agreed that this "history" was going to be difficult to overcome; the group recognized that to achieve "winning" situations on the job they were going to have to establish a new, "positive history" to achieve excellence in operation.

The afternoon sessions were only for the six new shift managers, one back-up candidate for that position, John Cotton, Superintendent-Operations and Fred Polaski, Assistant Superintendent-Operations. Since these were the final sessions of the program, the time was spent discussing plans for meeting the goal set by consensus of the Shift Managers, i.e., to gain support in being the standard bearers of excellence. There was also another exercise whose purpose was to demonstrate the need for task planners to involve task implementers in planning. During these classes, the Shift Manager selectees as a group appeared to be actively involved and thoroughly committed to their new roles. Their performance was generally impressive.

The last morning session was used to present the previous day's plans for goal implementation to all the senior managers and gain agreement as to how to implement the plans. Dickinson Smith was included in this session as an observer.

### Operator Interviews

One team member interviewed three operators who had not yet attended PFE training on shift (a Shift Superintendent, a Shift Manager in training, and an RO) as a basis for comparison with operators who had attended PFE training. They expressed a strong sense of injustice, and felt that the cause of the events which led to the shutdown order stemmed from management unresponsiveness to adverse working conditions. Attitudes ranged from extreme bitterness to a desire to move ahead with plant restart and get on with their lives. These three operators did not believe that anyone had slept on shift, or done anything inappropriate other than read non-technical material. The perceptions of the Commitment To Excellence Action Plan (CTEAP) varied from a belief that it would not work to a "wait and see" attitude. It was noted that several operators who had completed PFE training were on this same shift with the operators who had not completed training. In particular, the shift superintendent who was interviewed is aware that he will be removed from shift when all other operators have completed PFE training. He stated that he feels very bitter and the personnel interviewed confirmed that he conveys those feelings to those on shift. This is an area of possible concern because of the effect that the Shift Superintendent could have on the attitudes of operators who have completed training. !

*- has been removed*

The staff interviewed six operators who had completed PFE training. In general, the operators agreed with the root causes of the problems at Peach Bottom as identified by MAC. The consensus was that no one asked them what the Commitment to Excellence Program should include, nor did they have input to the PFE training program. There was agreement that the course was designed to help the operators learn more about themselves and, in turn, about how to communicate with others. Most said that they used their new-found skills to relate to people who had jobs outside the control room.

There were a number of other overall impressions gained through these interviews. They are, briefly:

- ° The operators indicated that the course was not intended to address problem issues specific to Peach Bottom and the shutdown order, such as root causes of the problems, disciplinary policies, inattentiveness to duty, operator responsibilities regarding use of procedures and as defined in 10 CFR 55, and operator attitudes toward safety.
- ° The operators have a fairly accurate idea of their role as operators although none of them has ever seen a job description for a Control Room Operator at Peach Bottom. Their view toward safety varied widely as indicated by the fact that some operators viewed procedures as a reference.



- ° Discipline has not been consistently applied in the past, nor did anyone have a really clear idea of what the rules were. All appeared willing to follow disciplinary guidelines that have employee input, are clearly stated, and are applied to everyone equally.
- ° The PFE training program was well received by the operators; however, they all believe that the long-term effects will be minimal if everyone at Peach Bottom (and perhaps PECO) doesn't take the course. They believe that if the attitudes and skills learned are not maintained and reinforced, they will not last in the work environment. They also feel that they have returned to the same hostile environment. \*
- ° While admitting to various degrees of inattentiveness, operators stated that they do not believe they did anything that was unsafe. However, they clearly understand that this behavior will no longer be tolerated. They do believe that inattentiveness became acceptable because PECO management allowed it.
- ° Operators expressed cautious optimism about improved communications. They see that the new plant manager is accessible and that lines of communication have been opened in both an upward and downward direction. However, they realize that a great deal of responsibility has been placed on him and until shift managers are trained and in place, there is a chance that those communication lines won't always function effectively at 100 percent.
- ° Operators feel they have taken an unfair share of the blame for the shutdown order. They see no reason why engineers (STAs) should not have received letters of reprimand since they were engaging in many of the same behaviors. They also believe that two of the shift supervisors should not have been removed since they did not condone the inattentive behaviors.
- ° Most operators are not sure what the impact of disciplinary actions will be on their future.

The inspectors were unable to determine that attitudes toward operations had changed, but did perceive that the operators were aware of the changes that are necessary to enhance attentiveness necessary for safe operation. It should also be noted that the overall perception of those who had not taken the course and those who have is not substantially different.

Meeting with Plant Manager, Dickinson Smith

Dickinson Smith described his role in the operator selection for training process. Shortly after he arrived on site in late April, Smith personally interviewed 34 licensed operators which included the 24 who entered the training program. The other ten were 5 shift superintendents, 3 senior reactor operator trainees, and 2 licensed operators who did not volunteer for the course. The interviews were intended to allow the new Plant Manager to meet each of the operators, to gain an insight into their views of the shutdown order, ask what policies they think should be changed, inform them of his expectations, and try to determine if there were any "unacceptable" operators. There was no discussion of individual on-shift performance.

Smith stated that he was looking for unacceptable candidates rather than candidates who met some clearly defined acceptance criteria. These interviews were conducted before the results of the PECO claims security interviews were available and before RHR psychologists had begun screening for the PFE course.

Two individuals took themselves out of consideration for the training course. When the results of the PECO claims security investigations became available, Smith stated that he supported the company decision to eliminate the shift superintendents from consideration for training.

The Plant Manager interviews with the operators elicited the following general impressions which were previously provided to the NRC staff in a written communication: as a group, the operators were depressed but were eager to take whatever action was necessary to be allowed to restart. Most operators felt the shutdown order was not required to correct the situation. Lack of communication between management and shift workers and resentment toward some management actions taken since shutdown were expressed. Overall, however, the licensed operators communicated their desire to be part of the restart effort and their individual attitudes were such that the Plant Manager felt that they should all be allowed to participate in the training program.

Concerning the status of suggestions for change made by the operators in their interviews with the Plant Manager, Smith indicated that responses to some of the suggestions have been initiated such as brightening up the control room, hiring additional operators, upgrading procedures, and placing a personnel specialist on site. Other suggestions that are being considered or that responses are being developed for include career path to non-shift work positions, performance standards and evaluations established, new overtime policy, etc.

The RHR evaluation of the training program candidates that was provided to Smith indicated that the evaluators were very supportive of all candidates for the first training group and their potential for "rehabilitation". They had concerns with 2-3 individuals in the second group. - They did not identify them to us

The new shift manager position was described by Smith as a high status position reporting directly to the Superintendent of Operations. The position carries more decision-making authority and greater involvement in the grievance and disciplinary processes than the shift superintendent position. In addition, Smith stated that the position had a potential career path to PECO management. Six of 12 shift manager candidates were selected for training.

Concerning management actions to promote two-way communication, employee involvement and performance evaluation, Smith described the "Tell It to the Manager" program, the one day seminar retreat for upper management, and the monthly meetings with Senior Vice-President Kemper for PECO managers, which are admittedly more "hardware" than "people" oriented. Smith indicated that he is in frequent contact with PECO management, especially with Graham Leitch and that more frequent visits will be made to Peach Bottom by PECO management.

An employee involvement program has not yet been established, however, several types are under consideration. Operations staff personnel are involved in the shift rotation task force and the Peach Bottom plant improvement committee. A performance standards and evaluation system has not yet been established.

The staff interview with Dickenson Smith resulted in the following general impressions. The plant manager has established programs to encourage communication between the plant staff and plant manager and that other programs are being considered or are in the process of being developed. However, it is the staff's understanding that few formal mechanisms exist at present to: (1) ensure adequate input from all levels of site and support organizations prior to corporate decision-making, (2) enhance PECO/Peach Bottom communications, and (3) ensure that processes are in place to identify precursors to similar or other problems.

#### Exit Interview

At an exit interview on September 26, 1987, the following preliminary observations were brought to the attention of PECO plant management.

The PFE training has provided licensed operators with useful communications skills which should help them improve their attitude and performance.

The Peach Bottom operating philosophy has not changed and operators interviewed have not accepted that behavior which gives the appearance of sleeping is unsafe even though they acknowledge that it is no longer acceptable.

Peach Bottom operators interviewed have not accepted that other inattentive behavior like non-technical reading is inappropriate even though they acknowledge that is not acceptable.

The PFE course did not provide operators with expectations of the company about standards of performance, (e.g. attentive as opposed to inattentive behavior on duty). Trainers suggested operators would set higher standards but that was not clear to the NRC team.

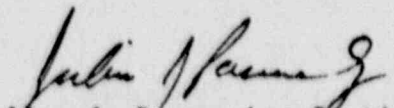
The continuing presence in the control room of a bitter Shift Superintendent is having a negative impact on the supportive environment that MAC and RHR consider necessary for operators.

Based on review of shift manager PECO claims security investigation statements, and previous discussions with one shift manager selectee and with RHR, the team was concerned about the commitment of some shift manager selectees to this pivotal position.

#### Summary

The training program was designed to help operators gain personal insights and communications skills and to accept limited responsibility for the problems at Peach Bottom. It meets those goals insofar as operators now accept that inattentiveness to duty is behavior that is unacceptable to the NRC. They still feel, however, that their previous behavior was safe. The long-term effects of the program can only be determined through longitudinal measures. Also, the course was not content oriented, as noted above, and therefore did not deal with some significant issues of operator attitude and behavior.

Operators interviewed clearly understand that their new skills will only continue to be useful if they are reinforced. Interviews with plant management and consultants involved with the Commitment to Excellence Action Plan confirmed much of what the staff already knew from review of the plan. There was no information available from either MAC or RHR that dealt with personnel on an individual basis. Interview results were presented to both the utility and the NRC in the aggregate. Since all phases of the PFE training program have not been completed, only a limited number of observations and interviews were feasible at the time of the inspection. Therefore, this should be considered an interim report; consequently, the staff feels that it would be premature to present any final conclusions regarding the results of the PFE training program until the review is complete.

  
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— Note: Not in PDR.

JT - This is the "official" report of the inspection team that went to look at the Peach Bottom rehab program back in September. (We saw Jim Linville's input some time ago.) I sent Lieberman a copy of this.  
Brent

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