~~*** SAFEGUARDS INFORMATION ***~~

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

May 8, 1992

Docket Nos. 50-277
and 50-278

Mr. Dickinson M. Smith
Senior Vice President - Nuclear
Philadelphia Electric Company
P.O Box 195
Wayne, Pennsylvania 19087-0195

Dear Mr. Smith:

SUBJECT: PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3 - OPERATIONAL SAFEGUARDS RESPONSE EVALUATION (TAC NOS. M83057 AND M83058).

This letter conveys the results and conclusions of the Operational Safeguards Response Evaluation (OSRE) conducted by the NRC's Office of Nuclear Reactor Regulation at the Peach Bottom Atomic Power Station, Units 2 and 3, from April 13 through 16, 1992. The OSRE team was composed of NRC personnel assisted by members of the U.S. Army Special Forces. One purpose of the OSRE program is to evaluate licensees' abilities to respond to an external threat by focusing on the interactions between operations and security in establishing priorities for protection of equipment and on the defensive strategies used. The OSRE also includes a safety/safeguards interface review in order to continue to assure that safeguards measures do not adversely affect safe operation of the facility.

The OSRE conclusions are documented in the enclosed report (Part I, Operational Safeguards Readiness Review; and Part II, Safety/Safeguards Interface Review). This enclosure, which contains safeguards information of a type specified in 10 CFR 73.21, will not be placed in the Public Document Room, and must be protected against unauthorized disclosure.

The drills, exercises, and demonstrations observed by the team and the results of interviews conducted by the team indicated a weakness in one area and strengths in several areas. The weakness that the team considers to warrant your attention is identified in the report as a concern. Overall, however, the security force demonstrated an excellent contingency response capability. Of particular note was the high quality and extent of operations involvement in the planning and exercising of the contingency response capability, including use of the station's reactor simulator. In addition to being an excellent training and self-auditing device for security contingencies, the joint drills appeared to have a potential side-benefit of contributing to operator training for severe accident management. The team also concluded that effective provisions were in place to assure that safeguards measures did not adversely affect the safe operation of the plant.

~~*** SAFEGUARDS INFORMATION ***~~

Portions withheld - Ex 3 and Ex 4

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The enclosed report does not convey any new regulatory requirement. Its findings have been considered with respect to your ability to meet the general performance objective and requirements of 10 CFR 73.55(a). We request that you review the report and provide a response to this office within 45 days after receiving this letter. Your response should specifically address the concern identified in the report.

This letter affects one respondent and, therefore, is not subject to the Office of Management and Budget review under Public Law 96-511.

Sincerely,

Steven A. Varga, Director
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation

Enclosure:
Operational Safeguards Response Evaluation
(Part I, Operational Safeguards Readiness Review;
Part II, Safety/Safeguards Interface Review)

cc w/enclosure:
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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION

NRC Inspection Report: Operational Safeguards Response Evaluation
License Nos: DPR-44, DPR-56
Docket: 50-277, 50-278
Licensee: Philadelphia Electric Company
Facility Name: Peach Bottom Atomic Power Station Units 2 & 3
Inspection at: Delta, PA
Inspection conducted: April 13-16, 1992
Inspection Team: David N. Orrik, Team Leader, NRR
Arthur Della Ratta, Physical Security Inspector, R-I
Gail M. Christoffer, Physical Security Inspector, R-III
Michael S. Warren, Security Specialist, NRR
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NRC Consultants: U.S. Army Personnel

Approved by: _____ 4/30/92
David N. Orrik, Team Leader Date Signed
Performance Assessment Section
Reactor Safeguards Branch
Division of Reactor Inspection and Safeguards
Office of Nuclear Reactor Regulation

Approved by: _____ 4/30/92
Robert J. Dube, Chief Date Signed
Performance Assessment Section
Reactor Safeguards Branch
Division of Reactor Inspection and Safeguards
Office of Nuclear Reactor Regulation

FINAL REPORT

PEACH BOTTOM ATOMIC POWER STATION
UNITS 2 AND 3

OPERATIONAL SAFEGUARDS RESPONSE EVALUATION

SAFEGUARDS INFORMATION
DETERMINATION MADE BY

Robert J. Dube 4/30/92
Signature-Title-Office-Date
Robert J. Dube, Chief
Performance Assessment Section
Reactor Safeguards Branch
Division of Reactor Inspection
and Safeguards
Office of Nuclear Reactor
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UNITS 2 AND 3

OPERATIONAL SAFEGUARDS RESPONSE EVALUATION

PART I
OPERATIONAL SAFEGUARDS READINESS REVIEW

PART I - OPERATIONAL SAFEGUARDS READINESS REVIEW

1.0 PURPOSE

The NRC conducted an Operational Safeguards Response Evaluation (OSRE) of the Philadelphia Electric Company's Peach Bottom Atomic Power Station from April 13 through 16, 1992. The plant is located in York County, Pennsylvania about 18 miles south of Lancaster, Pennsylvania. Peach Bottom Units 2 and 3 are General Electric BWR's with a licensed power of 3293 MWt.

One of the two purposes of the OSRE, addressed in this Part I, was to evaluate the licensee's ability to respond to an external threat. The general performance objective of 10 CFR 73.55(a) requires a licensee's physical protection program to be designed to protect against the design basis threat of radiological sabotage as stated in Section 10 CFR 73.1(a). Section 10 CFR 73.55(h) includes a requirement that the licensee take immediate measures to neutralize a threat by requiring armed response personnel to interpose themselves between vital areas and any adversary attempting entry for the purpose of radiological sabotage while concurrently requesting assistance from local law enforcement agencies. In conducting its evaluation, the OSRE team focused on the interactions between operations and security in establishing priorities for protection of equipment and on the defensive strategies used.

1.1 EVALUATION METHODOLOGY

The evaluation team consisted of a nuclear engineer and safeguards specialists from the Office of Nuclear Reactor Regulation (NRR) and the NRC's regional office and the resident inspector. The team also included active-duty U.S. Army personnel serving with the U.S. Army Special Forces Command acting in a support role to NRC under an interagency agreement.

In conducting this evaluation, the OSRE team considered a spectrum of external adversaries with varying characteristics.

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9/11 EX. 4

The spectrum was bounded by the characteristics of the design basis threat for radiological sabotage specified in 10 CFR 73.1(a). The external design basis threat is defined as "A determined violent external assault, attack by stealth, or deceptive actions, of several persons with the following attributes, assistance and equipment: (A) Well-trained (including military training and skill) and dedicated individuals, (B) inside assistance which may include a knowledgeable individual who attempts to participate in a passive role (e.g., provide information), an active role (e.g., facilitate entrance and exit, disable alarms and communications, participate in violent attack), or both, (C) suitable weapons, up to and including hand-held automatic weapons, equipped with silencers and having long range accuracy, (D) hand carried equipment, including incapacitating agents and explosives for use as tools of entry or otherwise for destroying reactor, facility, transporter, or container integrity or features of the safeguards system."

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The team assumed that significant radiological release would be the objective of power reactor radiological sabotage and used prevention of significant core damage as an evaluation criterion. This criterion makes adversary success more difficult and more accurately reflects significant public health and safety concerns than would a criterion of prevention of damage of any piece of vital equipment.

The evaluation began with a preliminary target analysis performed before the team arrived on site.

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EX. 4

The team's initial effort on-site was to walk around the plant, observing potential protected area entry points, routes, and distances either to equipment or to doors providing access to equipment included in target sets. The team also noted the normal duty stations of personnel who might participate in a contingency response and the locations where special contingency response equipment was stored.

During the next two days the team observed four licensee contingency drills.

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EX. 4

The team did not actively participate in the drills. The team's input for drills was limited to the selection of a target set, adversary characteristics, and entry points at the protected area perimeter. All drills and team input parameters were within the scope of those normally used by the licensee. A team member observed the licensee's critique of each drill.

The team also conducted four table-top drills. These drills simulated overt external assaults. For each exercise, team members interviewed a licensee contingency response team leader. An OSRE team member identified adversary

characteristics, an entry point into the protected area, and movement toward safety equipment. The response team leader indicated how the responding security officers would be deployed. The response team leader and the OSRE team members then estimated the time required for the adversaries to reach designated targets and the response officers to reach interdicting positions, based on the actual locations of the responding officers at the time of the exercise.

The team used its target set analysis and the results of the drills to evaluate the licensee's efforts at establishing priorities for protection of equipment; the ability of responding officers to arrive at suitable interdicting positions in timely fashion, in sufficient numbers, and appropriately armed and equipped; and the licensee's defensive strategies for deployment of response officers and equipment. The team evaluated how drills were being used both as a training tool and as a means of self-audit of the defensive strategy. The drills were also used to evaluate individual and team tactical movement, command, control, and communications. The drills were not viewed as a pass/fail test. At Peach Bottom, the team also observed and evaluated the coordinated contingency response efforts of operations and security, with emphasis on the licensee's innovative use of the station reactor simulator during the drills.

Team members also interviewed several security officers regarding use of deadly force at the site. A broad spectrum of possible contingencies was used, to assure that force would not be used unnecessarily in situations that did not threaten the health and safety of individuals or the general public and that appropriate force would be used if necessary, in situations such as those discussed in NRC Information Notice NO. 89-05, "Use of Deadly Force by Guards Protecting Nuclear Power Reactors Against Radiological Sabotage."

The team interviewed members of the training staff and observed several weapons training techniques. The purpose was to evaluate the appropriateness of the training and experience of the training staff, the facilities available, and the techniques and frequency of training employed to assure that contingency response personnel are qualified to execute the responsibilities assigned to them, as required by 10 CFR Part 73, Appendix B.

2.0 EVALUATION

In the observed drills the security force demonstrated the ability to bring substantial response assets to bear quickly and effectively against simulated armed intruders. Operations personnel, using the reactor simulator to duplicate the simulated destruction of safety equipment in the drills, demonstrated the ability to quickly take effective mitigating measures. However, the team did find a weakness that warrants attention. In several of the drills, the team identified scenarios in which mock adversaries exploited one location on the perimeter which afforded quick access to certain critical targets. This finding is labeled as a "Concern." The team noted that corrective action for this Concern was being considered by licensee security staff before the team left the site. The team identified several "Strengths" in the contingency response capability.

2.1 SECURITY MANAGEMENT (STRENGTH)

While on site, the OSRE team noted several aspects of the security programs which were considered to be evidence of both a strong station management involvement and support and an effective security management team. In particular, the OSRE team was impressed with the general competence and positive attitude of response personnel and with the state of security contingency training, especially in realistic on-site training with operations involvement and employment of the simulator during full scale security drills. The overall protective strategy was sound and evidenced diligent, cooperative work between security and operations. The quality of the target analysis and the drills were considered evidence of capable personnel, good leadership, and close-knit, effective, teamwork.

2.2 CONTINGENCY RESPONSE (STRENGTH)

2.2.1 General Description

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The shields provided officers with both protection and a firing barricade.

Primary law enforcement support was provided through the Pennsylvania State Police "York Barracks" located about 35 miles from the plant. Initial response to the plant would be 2-3 officers within 15 to 30 minutes. The team's evaluation focused on the capability of the plant security force to neutralize adversaries until sufficient support arrives.

2.2.2 Results of Drills

A different critical equipment set was used in each of the four site contingency drills. In three of the drills, the mock adversaries were interdicted and prevented from simulating the destruction of a complete set of targets.

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This was also the case during all other actual and table top drills conducted during the OSRE.

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EX 3

2.2.3 Team Conclusions

The team drew the following conclusions from conducting interviews and observing drills, the physical layout of the plant, and the location of contingency response personnel and equipment.

1. Response Planning and Strategy (STRENGTH)

The team noted the excellent support that had been provided by operations in the identification of critical equipment and for planning and execution of contingency strategy and drills. The team was particularly impressed by the active involvement by key operations personnel in simulator activities during security drills and drill critiques. Prior planning and the inclusion of simulator activities resulted in both operations and security devising protective strategies which together appeared to have been effective in protecting against the simulated sabotage attempt in the drills.

The observed drills indicated that the defensive strategy devised by security for protecting against an external adversary with the characteristics of the NRC design basis threat was generally sound. In three of the four actual contingency exercises conducted, the licensee demonstrated the ability to

bring substantial response assets to bear quickly and effectively. In particular, these three drills demonstrated that the licensee's pre-positioning of response officers, weapons, and hardened posts in key areas within the plant provided an immediately available response capability.

2. Critical Equipment Protection (Concern)

The team noted that security and operations had established effective and continuing liaison for both planning and execution of contingency strategy and drills. The drills observed confirmed that the licensee's defensive strategy for protecting most equipment against an external adversary was sound. [SGI

EX. 3

As a result, it appeared uncertain whether the licensee had an assured capability of interdicting the full range of the design basis threat in time to prevent sabotage of that critical equipment from attack from those perimeter locations. The majority of the actual and table-top drills did indicate that most perimeter entry points and target sets presented a greater challenge to the adversaries and resulted in responders reaching potential interdiction positions first. EX 3

3. Response Team Performance During Drills (STRENGTH)

In general, armed responders moved tactically, used good weapons discipline, and used cover and concealment intelligently. The good performance of response officers was evidence of a well motivated and well trained security force. The mock adversaries from the licensee security force were skillful and aggressive. The team felt that they provided the licensee armed response force with a good, realistic yardstick by which to assess their response capability. Controllers made good judgements during drills. Licensee critiques were considered good. Lessons learned appeared to be properly implemented.

4. Command, Control & Communications (STRENGTH)

As evidenced in the drills, command, control and communications was a positive element of Peach Bottom's response capability. Command and control personnel coordinated response efforts in a positive and quick fashion. For example, responding officers were quick to redeploy from assigned response positions to new positions relative to the movement and location of the adversaries.

The communications between security and operations were also very effective in assisting both security in tactical movement for equipment protection and operations in taking mitigating actions to counter adversary movement.

5. Participation by Operations in Security Drills (STRENGTH)

The team considered the active participation by operations in the security response drills to be a significant strength of Peach Bottom's security response capability. The team closely observed the quality and extent of operations involvement in full-scale security drills. The employment of the reactor simulator in the drills demonstrated convincingly how beneficial a role operations can play during a security contingency. The team considers the simulator an outstanding training tool for both operations and security because of the realistic and coordinated drill-actions that both security and operations took in the drills. By being immediately notified of adversary movement and actions, operations was able to take timely and effective actions in the simulator which, in one drill, prevented an almost certain uncovering of the core from simulated sabotage. In addition, operations provided quick guidance to security in prioritizing protective efforts during the contingency drills. The real time coordination was outstanding.

Security and operations are also commended for their excellent work in target set analysis.

2.3 CONTINGENCY RESPONSE TRAINING (STRENGTH)

The consistently good performance of response officers was evidence of a well motivated and well-trained security force. Their performance was especially convincing because of the high quality of the mock-adversary force. Additionally, the licensee had been providing response officers with excellent contractor-assisted training in response tactics gained from relevant work within the industry. The quality of training and mock-adversaries were important elements in the training and motivation of the licensee security officers. It appeared that drills were used effectively as a training tool. The scenarios normally used by the licensee covered the full spectrum of characteristics of the design basis threat. The 3-D plant mock-up was considered a valuable asset in conducting time lines and developing security strategy.

Future plans are for acquisition of a training area for force-on-force close quarter combat between security individuals. Such a training area has proven quite beneficial at other nuclear power plants.

2.4 WEAPONS TRAINING (STRENGTH)

Weapons training included well recognized, specialized techniques which are appropriate for the type of close engagements which could occur in a contingency involving external adversaries with capabilities attributed to the design basis threat. These included, but were not limited to, weapons manipulation drills, stress shooting scenarios, target discrimination, multiple targets, night familiarization firing, and reactionary targets. The addition of a defensive position simulator provided a realistic training aid for teaching marksmanship from these hardened post locations. The security weapons training courses were well thought out and innovative in a good effort to maximize the quality and completeness of training possible in a small, indoor range. SGI EX3

The background and experience of the training staff was deemed sufficient for the type of training being conducted at Peach Bottom.

PEACH BOTTOM ATOMIC POWER STATION
UNITS 2 AND 3

OPERATIONAL SAFEGUARDS RESPONSE EVALUATION

PART II
SAFETY/SAFEGUARDS INTERFACE REVIEW

PART II - SAFETY/SAFEGUARDS INTERFACE REVIEW

The second purpose of the OSRE was to continue to assure that safeguards measures do not adversely affect the safe operations of the plant. Section 10CFR 73.55(d)(7)(ii) requires a licensee to design the access control system to accommodate the potential need for rapid ingress or egress of individuals during emergency conditions or situations that could lead to emergency conditions.

The OSRE team members interviewed the security manager, an operations shift manager, and an auxiliary equipment operator. During this review, team members made a walking tour of the safety equipment throughout the plant. The objectives of the walking tour and discussions were to assure that both access to and egress from the protected area and vital areas would be prompt in an emergency situation and that security radio transmissions would not interfere with plant operations.

A. Protected Area Emergency Access

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[redacted]

EX 3

Both security supervisory personnel and operations staff appeared to understand that the plant manager and operations shift manager had the authority to order routine security procedures to be bypassed in an emergency.

B. Vital Area Access and Egress

Entry to vital areas is needed under some emergency operating procedures at Peach Bottom. The team concluded that effective provisions were in place to assure that safeguards measures would not adversely affect safe operation of the plant.

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For personnel safety, all vital and other security areas could be egressed by use of crash bars or door knobs irrespective of the access control system status. The team did not find any location where a person could be trapped without a safe way to exit.

C. Communications

Areas which contain equipment sensitive to radio frequency interference or electromagnetic interference have been posted to prohibit transmitting radio signals in those locations.

No safety/safeguards communication problems were identified. In general, security officers and operators use common safety equipment identification (rather than door numbers) when communicating their locations to each other.