
1982 Evaluation

**Peach Bottom
Atomic Power
Station**

Philadelphia Electric
Company

INPO 

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EVALUATION
of
PEACH BOTTOM ATOMIC POWER STATION

Philadelphia Electric Company

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SUMMARY

INTRODUCTION

The Institute of Nuclear Power Operations (INPO) conducted an evaluation of Philadelphia Electric Company's (PECO) Peach Bottom Atomic Power Station during the weeks of September 13 and 20, 1982. The station is located on the Susquehanna River near Delta, Pennsylvania, and consists of two 1065 Megawatt (electrical) General Electric boiling water reactor plants. The plants began commercial operation in July 1974.

PURPOSE AND SCOPE

INPO conducted an evaluation of site activities to make an overall determination of plant safety, to evaluate management systems and controls, and to identify areas needing improvement. Information was assembled from discussions, interviews, observations, and reviews of documentation.

The INPO evaluation team examined station organization and administration, operations, maintenance, technical support, training and qualification, radiological protection, and chemistry. The team also observed the actual performance of selected evolutions and surveillance testing. Corporate activities were not included in the scope of the evaluation, except as an incidental part of the station evaluation. As a basis for the evaluation, INPO used performance objectives and criteria relevant to each of the areas examined; these were applied and evaluated in light of the experience of team members, INPO's observations, and good practices within the industry.

INPO's goal is to assist member utilities in achieving the highest standards of excellence in nuclear plant operation. The recommendations in each area are based on best practices, rather than minimum acceptable standards or requirements. Accordingly, areas where improvements are recommended are not necessarily indicative of unsatisfactory performance.

DETERMINATION

Within the scope of this evaluation, the team determined that the station is being safely operated by well-qualified personnel.

The following beneficial practices and accomplishments were noted:

Industry operating experience is utilized effectively.

Innovative preventive maintenance efforts have improved the performance of snubbers, safety relief valves, and major valves in the drywell.

Shift technical advisors are used effectively and respected by the operating organization.

The number of continuously activated annunciators is minimized.

Maintenance and test personnel demonstrate a high level of experience and competence.

Improvements were recommended in a number of areas. The following are considered to be among the most important:

Additional emphasis is needed in control of station chemistry.

The accumulation of solid low level radwaste and the potential for spread of low level contamination off site should be reduced.

Stronger management involvement is needed in site training activities and interfaces with off-site training activities.

The quality of, use of, and adherence to procedures needs improvement.

Supervisory involvement in daily activities needs improvement.

In each of the areas evaluated, INPO has established PERFORMANCE OBJECTIVES and supporting criteria. All PERFORMANCE OBJECTIVES reviewed during the course of this evaluation are listed in APPENDIX II.

Findings and recommendations are listed under the PERFORMANCE OBJECTIVES to which they pertain. Particularly noteworthy conditions that contribute to meeting PERFORMANCE OBJECTIVES are identified as Good Practices. Other findings describe conditions that detract from meeting the PERFORMANCE OBJECTIVES. It would not be productive to list as Good Practices those things that are commonly done properly in the industry since this would be of no benefit to PECO or to INPO's other member utilities. As a result, most of the findings highlight conditions that need improvement.

The recommendations following each finding are intended to assist the utility in ongoing efforts to improve all aspects of its nuclear programs. In addressing these findings and recommendations, the utility should, in addition to correcting or improving specific conditions, pursue underlying causes and issues.

As a part of the second and succeeding evaluations of each station, the evaluation team will follow up on responses to findings in previous reports. Findings with response actions scheduled for future completion have been carried forward in APPENDIX I to this report. In areas where additional improvements were needed, a new finding that stands on its own merit has been written. Thus, this report stands alone, and reference to previous evaluation reports should not be necessary.

The findings listed herein were presented to PECO management at an exit meeting on September 23, 1982. Findings, recommendations, and responses were reviewed with PECO management on November 3, 1982. Responses are considered satisfactory.

To follow the timely completion of the improvements included in the responses, INPO requests a written status by July 15, 1983. Additionally, a final update will be requested six weeks prior to the next evaluation.

The evaluation staff appreciates the cooperation received from all levels of PECO.

PHILADELPHIA ELECTRIC COMPANY

Response Summary

Philadelphia Electric Company remains dedicated to operating the Peach Bottom Atomic Power Station in the safest, most efficient manner possible. Our goal remains the achievement of the highest standards of excellence in nuclear power plant operation. We are proud of our accomplishments in operating the Peach Bottom Atomic Power Station, which the INPO evaluation team has recently verified to be safely operated by well-qualified personnel.

Philadelphia Electric readily accepts the INPO evaluation team's recommendations and will direct our efforts to further improvement in the areas addressed by the team.

Numerous activities have already been initiated that address areas identified by the INPO team as requiring improvement. A new building has recently been completed, and construction has started on an administration building. These additional facilities have reduced the overcrowding and consolidated the maintenance activities. Conditions will improve further when the new administration building is available.

A radioactive waste task force has been investigating the radioactive waste areas and has initiated a program to reduce the accumulated low level radioactive waste in the plant. A formal ALARA program is included in the scope of the task force. A preventive maintenance program is being implemented that contains a computerized history and scheduling system along with tracking and reporting capabilities. This system will provide station management with the information necessary to implement some of the improvements referenced in the body of this report.

The station procedures are continually being evaluated and upgraded as a direct result of a previous INPO recommendation. Supervisory personnel will place additional emphasis on the use of and conformance to procedures.

Philadelphia Electric Company recognizes the importance of highly qualified personnel in the operation of the nuclear power plant and is committed to the further development of its nuclear training programs to maintain high standards.

ORGANIZATION AND ADMINISTRATION

STATION ORGANIZATION AND ADMINISTRATION

PERFORMANCE OBJECTIVE: Station organization and administrative systems should ensure effective implementation and control of station activities.

Finding
(OA.1-1) **The quality of some procedures needs to be upgraded.** Incomplete or inaccurate procedures were identified in several areas.

Recommendation Review plant procedures for adequacy and accuracy. The review should include adequacy of initial conditions and precautions, level of detail, and technical accuracy of information.

Response A program has been initiated to impress upon employees the importance of identifying procedure deficiencies and following through on initiation of appropriate revisions. A check-off list will be provided to the reviewers of the station procedures. The Plant Operations Review Committee (PORC) will intensify its review of the procedures. Chemical analysis procedures will be reviewed for accuracy, adequacy, and completeness by April 1, 1983. Others will be reviewed as part of the periodic review process.

Finding
(OA.1-2) **More rigorous adherence to procedures is needed.** A number of instances of failure to follow procedures were observed.

Recommendation Implement clear standards for procedure adherence. Require supervisors to take an active role in assessing and improving procedure adherence through direct observation of evolutions. Encourage feedback from procedure users to improve procedures.

Response A program will be initiated to encourage and reinforce requirements to use procedures so that activities are performed correctly and procedure problems are identified and corrected. Station management will initiate the program with a letter to the supervisors stressing their responsibilities and cooperation. Additionally, training will address this area of responsibility. An Administrative Procedure (A-82) is currently being written that will address the identification and resolution of significant problem areas. It will provide for the identification of deficiencies in procedure use at the senior management level so appropriate corrective measures may be taken. These actions will be complete by July 1, 1983.

INDUSTRIAL SAFETY

PERFORMANCE OBJECTIVE: Station industrial safety programs should achieve a high degree of personnel safety.

Finding (OA.5-1)	The industrial safety program does not ensure identification and prompt correction of deficiencies. A number of unidentified safety deficiencies were noted. Deficiencies identified during accident investigations and the annual fire-safety inspection are not always corrected in a timely manner.
Recommendation	Implement a program to routinely assess industrial safety practices, ensure timely correction of deficiencies, and improve the safety awareness of personnel at the plant.
Response	The Personnel Department - Safety Division, in concert with Electric Production, will develop a program to meet the INPC recommendations. This will be completed by March 1, 1983.

OPERATIONS

OPERATIONS ORGANIZATION AND ADMINISTRATION

PERFORMANCE OBJECTIVE: The operations organization and administrative systems should ensure effective control and implementation of department activities.

Finding
(OP.1-1)

The following Good Practice was noted: The shift technical advisors (STA) have been integrated into the shift organization and assigned technical responsibilities in an effective manner.

The STA responsibilities include the following:

- a. equipment trending and analysis
- b. resolution of procedural problems
- c. troubleshooting of operational problems
- d. interfacing with plant training as a source of operational information
- e. investigation of nonconformance reports
- f. providing technical assistance to the engineer-operation

PLANT STATUS CONTROLS

PERFORMANCE OBJECTIVE: Operational personnel should be cognizant of the status of plant systems and equipment under their control, and should ensure that systems and equipment are controlled in a manner that supports safe and reliable operation.

Finding
(OP.3-1)

Shift relief methods for the plant and auxiliary operators need improvement. The shift relief is informal with plant status often given from memory. This does not always ensure an adequate exchange of information.

Recommendation

Implement shift relief checksheets for plant and auxiliary operators to guide the process. Operators should be instructed in the proper use of relief procedures and the importance of maintaining shift continuity. Management should periodically assess the adequacy of the process. INPO's Good Practice OP-201, "Shift Relief and Turnover," could be of assistance in this effort.

Response A shift relief checklist will be developed for plant and auxiliary operators and will be executed by the outgoing shift, reviewed with oncoming shift personnel, and then provided to shift supervision at the shift meeting. These changes, including management assessment and instruction of operators in proper relief procedures, will be implemented by February 1, 1983.

Finding (OP.3-2) A periodic review of blocking tags is not performed. Some improperly placed tags were found in the plant.

Recommendation Establish a program to periodically review blocking tags attached to components in the plant. The review should include the following:

- a. applicability and need for outstanding tagouts
- b. a check of condition of posted tags
- c. verification of proper attachment of tags and position of tagged equipment
- d. a check for the presence of unauthorized tags

Response An audit will be performed of all outstanding accessible blocking tags after each major refueling outage. An audit of blocking tags will be performed by auditors from the methods division at a frequency not less than once every six months. These audits will address items a. through d. of the recommendation.

Finding (OP.3-3) Uncontrolled notes, graphs, portions of procedures, and drawings of a temporary nature used as operator aids are attached to control panels at various plant locations. A method is needed for approving, reviewing, and updating this temporary information.

Recommendation Review presently posted operator aids for appropriateness and accuracy. Establish guidelines for the approval, posting, and periodic supervisory review of all posted operator aids.

Response The shift superintendent will be required to approve all operator aids that are posted for purposes for enhancing operation. Information currently posted will be reviewed by shift supervision and approved or removed. Posted information will be re-evaluated on a quarterly basis. This program will be implemented by January 1, 1983.

OPERATIONS PROCEDURES AND DOCUMENTATION

PERFORMANCE OBJECTIVE: Operational procedures and documents should provide appropriate direction and should be effectively used to support safe operation of the plant.

Finding (OP.5-1)	Administrative controls are needed for information tags used in the plant. Some of these tags are outdated, and others are used improperly to supplement controlled operating procedures.
Recommendation	Implement a program for the use and periodic review of information tags in the plant. The program should include the following: <ul style="list-style-type: none">a. guidelines concerning information to be provided on the tagsb. review and authorization of tags prior to placementc. proper tag placement in the plantd. periodic checks to ensure tag information is current
Response	The shift superintendent will be required to approve all information tags that are posted for purposes of enhancing operation. Tags currently posted will be reviewed by shift supervision and approved or removed. Posted tags will be re-evaluated on a quarterly basis. This program will be implemented by January 1, 1983.

OPERATIONS FACILITIES AND EQUIPMENT

PERFORMANCE OBJECTIVE: Operational facilities and equipment should effectively support plant operation.

Finding (OP.6-1)	Some plant valves, piping, and components are not labeled with clear, permanent, and distinguishable markings. There is a program to accomplish this task, but it is actively pursued only on equipment that is part of the Critical Equipment Monitoring System (CEMS).
Recommendation	Place increased emphasis on the program for labeling selected components, valves, and piping. Place priority on safety-related systems.
Response	Valves will be identified with tags in conjunction with the implementation of CEMS. Priority will be as follows:

- a. locked valves
- b. valves in drywell (when accessible)
- c. one system per month thereafter (ECCS first)

Guidelines will be established to identify which components (or assemblies) must be marked. An individual will be assigned to coordinate this activity. The equipment list will be used to identify and describe the equipment. Piping will be similarly identified after the valves and components have been completed. High radiation doors will be identified with a sign indicating high radiation, the equipment within the room, and the key that controls access. The target date for completion is January 1, 1984.

MAINTENANCE

PLANT MATERIAL CONDITION

PERFORMANCE OBJECTIVE: The material condition of the plant should be maintained to support safe and reliable plant operation.

Finding
(MA.2-1)

The material condition of the plant reflects a need for additional attention to the identification and correction of deficiencies. A number of material deficiencies identified during the evaluation were not documented in the work control system. Among the deficiencies observed were numerous fluid system leaks, off-scale gauges, and inoperable equipment indicating lights.

Recommendation

Implement measures to improve the material condition of the plant including identification of observed plant deficiencies, cross reference of identified deficiencies to Maintenance Request Forms (MRF), and removal of deficiency identification upon completion of corrective action. INPO Good Practice MA-301, "Plant Material Deficiency Identification," could be of assistance in this effort.

Response

Station management will direct the operators to be more responsible for the cleanliness and maintenance of their assigned areas. The operators will be further trained to identify problem areas and follow up with paperwork to resolve the problem. Operators will also be instructed to tag deficient equipment to indicate corrective action has been initiated. These measures will be complete by March 1, 1983. Plant management will tour the facility more frequently to ensure conformance.

PREVENTIVE MAINTENANCE

PERFORMANCE OBJECTIVE: The preventive maintenance programs should contribute to optimum performance and reliability of plant equipment.

Good Practice
(MA.5-1)

The following Good Practice was noted: When snubbers are inspected in accordance with technical specification requirements, they are refurbished as a preventive maintenance measure. Corrective maintenance has been significantly reduced since implementation of the snubber test and refurbishment program in April 1980. For snubbers refurbished under this program, there have been no failures necessitating corrective maintenance or additional surveillance testing. Comprehensive documentation is used to track each snubber from initial installation through its lifetime in the plant.

MAINTENANCE PROCEDURES AND DOCUMENTATION

PERFORMANCE OBJECTIVE: Maintenance procedures should provide appropriate directions for work and should be used to ensure that maintenance is performed safely and efficiently.

Finding (MA.6-1)	A program is needed to review and control vendor manuals used in site maintenance and testing. Vendor manuals and revisions are not subjected to a technical review and approval process prior to use in maintenance and testing activities.
Recommendation	Implement a program to ensure that vendor manuals referenced in maintenance and testing procedures for Q-listed systems receive an appropriate safety and technical review and are formally approved for use. The program should also ensure that vendor manuals referenced in maintenance and testing of selected non-Q systems and components are formally reviewed and approved for use.
Response	Those manuals important to maintenance and testing of Q-listed systems will be identified by June 30, 1983. These manuals will be prioritized to provide a basis for review and updating. Philadelphia Electric Company will investigate using the appropriate vendors in performing this review. A plan for review and updating Q-listed system manuals will be developed by September 1, 1983.

MAINTENANCE FACILITIES AND EQUIPMENT

PERFORMANCE OBJECTIVE: Facilities and equipment should effectively support the performance of maintenance activities.

Finding (MA.8-1)	Control of measurement and test equipment (M&TE) used by the test branch needs improvement. Some M&TE overdue for calibration was stored on the ready-for-use shelves. Test personnel frequently leave M&TE in uncontrolled and unprotected work locations throughout the plant. M&TE controls have been established for contractors, maintenance, and construction branches; however, they have not been fully implemented for the test branch.
Recommendation	Implement controls within the test branch similar to those established for other branches governing the issue and return, removal from service, and inventory of M&TE.
Response	The test branch has reviewed its measurement and test equipment control program and developed improved practices within present space constraints. Final program upgrade will be completed when

the new centralized M&TE area becomes available as part of the administration building project scheduled for completion November 1, 1983.

Finding
(MA.8-2)

Storage and control of coded and non-coded items in shops and site warehouses need improvement. Examples include the following:

- a. The temperature, humidity, and cleanliness of storage areas are not properly controlled.
- b. Equipment that has exceeded shelf life is not replaced in a timely manner.
- c. "Q" and "non-Q" materials are not adequately segregated.

Recommendation

Implement a materials control program to provide for proper segregation of "Q" and "non-Q" material. Provide storage areas meeting material requirements for temperature, humidity, and cleanliness. Incorporate all applicable materials and components in the shelf-life program. Improve the existing program for reordering material to prevent depletion of stock below prescribed levels.

Response

An investigation will be conducted to identify deficiencies in warehousing and to determine appropriate corrective action including the appropriate use of satellite storerooms. This investigation will be completed by April 1, 1983. Appropriate corrective action will be initiated for identified deficiencies including those referenced above.

TECHNICAL SUPPORT

OPERATING EXPERIENCE REVIEW PROGRAM

PERFORMANCE OBJECTIVE: Industrywide and in-house operating experiences should be evaluated and appropriate actions undertaken to improve plant safety and reliability.

SOER STATUS

The status of Significant Operating Experience Report (SOER) recommendations is as follows:

<u>Number of Recommendations</u>	<u>Action Taken</u>
87	Satisfactory
44	Not applicable
15	Pending

The following recommendations are pending action:

<u>SOER Number</u>	<u>Recommendation Number</u>
81-2	2
80-6	9
81-13	6, 12
82-2	1, 5, 6
82-9	1, 2, 3, 4, 5, 6, 7, 8

An update on the status of each recommendation listed in the "pending action" category shown above is requested in the six-month follow-on response to this report. In addition, the status of each immediate action (red tab) SOER recommendation received subsequent to this evaluation should be included in the six-month follow-on response. A tabular summary, similar to that above, is requested.

PLANT MODIFICATIONS

PERFORMANCE OBJECTIVE: Plant modification programs should ensure proper review, control, implementation, and completion of plant design changes in a safe and timely manner.

Findings
(TS.4-1)

A number of jumpers and lifted leads have been installed for long periods of time without being processed as permanent design changes. It is recognized that modification requests have been submitted for the resolution of some of these jumpers and lifted leads.

Recommendation

Review the jumpers and lifted leads currently installed to determine which should be processed as permanent design changes.

Establish a program for a periodic review of jumpers and lifted leads. This program should ensure the removal of jumpers and lifted leads no longer needed and the initiation of modification requests for those that should be permanent modifications.

Response

The plant will review all long-term outstanding jumpers and lifted leads by June 30, 1983. Corrective action within the capabilities of the plant staff will be completed by September 1983. Those jumpers and lifted leads that require engineering modification for resolution will be identified, prioritized, and tracked to completion.

**Finding
(TS.4-2)**

Jumpers and lifted leads are installed in operating systems without an independent technical design review.

Recommendation

Perform an independent technical design review of the jumpers and lifted leads currently installed. Establish a method for performing an independent technical design review of jumpers and lifted leads prior to or promptly after placing the affected systems back in service.

Response

An independent technical design review of currently installed jumpers and lifted leads has been completed. The Jumper Log Procedure (A-42) will be revised by July 1, 1983 to require independent technical design review of jumpers and lifted leads by the shift technical advisor or other technically qualified personnel. This will normally be accomplished prior to installation, but in any case within 24 hours of installation.

PLANT EFFICIENCY AND RELIABILITY MONITORING

PERFORMANCE OBJECTIVE: Performance monitoring activities should optimize plant thermal performance and reliability.

**Finding
(TS.6-1)**

The following Good Practice was noted: The Acoustic Monitoring Program has made a significant contribution to improving plant reliability. The monitoring of safety relief valve (SRV) pilot valve condition and the capability to identify valve packing gland leakage on other major valves in the drywell has been effectively utilized for the following:

- a. scheduling SRV maintenance based on pilot valve condition
 - b. reducing coolant leakage by permitting selective backseating of drywell valves while monitoring motor operator current to avoid over torquing
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TECHNICAL SUPPORT PROCEDURES AND DOCUMENTATION

PERFORMANCE OBJECTIVE: Technical support procedures and documents should provide appropriate direction and should be effectively used to support safe operation of the plant.

Finding (TS.7-1)	Site request drawing changes are not always acted upon in a timely manner. Some drawing change requests have been open for more than a year.
Recommendation	Place increased emphasis on closing out the present open requests for drawing changes. Establish a method for ensuring timely action on drawing change requests in the future.
Response	A task force of twelve designers with dedicated supervision has been developed within the engineering design division to process drawing change requests and update as-built drawings in a timely manner. Single line electrical schematics and piping and instrument diagrams are assigned the highest priority because of their importance to plant operations.

TRAINING AND QUALIFICATION

TRAINING ORGANIZATION AND ADMINISTRATION

PERFORMANCE OBJECTIVE: The training organization and administrative systems should ensure effective control and implementation of training activities.

Finding (TQ.1-1)	Training department administrative policies and controls need to be expanded to improve departmental performance. Opportunities for improvement exist in coordination of vendor activities, development of instructors, documentation of training activities, and the clarification of training department personnel responsibilities.
Recommendation	Review the department goals and objectives to identify deficiencies in administrative policies and controls. Develop and implement appropriate policies to correct identified deficiencies including consideration of the items noted above.
Response	A departmental training procedure describing responsibilities, interfaces, control of vendor activities, budgetary responsibilities, instructor development, and training program approval is being developed. A training section organization chart and job description of key positions will be included. A revision to Procedure A-50 will be made so that the two procedures are supportive. These activities will be completed by April 1, 1983.

NON-LICENSED OPERATOR TRAINING AND QUALIFICATION

PERFORMANCE OBJECTIVE: The non-licensed operator training and qualification program should develop and improve the knowledge and skills necessary to perform assigned job functions.

Finding (TQ.2-1)	The non-licensed operator on-the-job training program does not clearly identify the knowledge and skills necessary for qualification.
Recommendation	Conduct a review of the on-the-job training program for non-licensed operators and implement appropriate measures to improve the effectiveness of the program. The following elements should be included: <ul style="list-style-type: none">a. tasks to be performed, observed, simulated, or discussedb. identification of individuals or classifications of individuals qualified and responsible for conducting on-the-job training

- c. guidelines for skills and knowledge required on systems, components, and procedures
- d. identification of individuals or classifications of individuals qualified and responsible for conducting final checkouts
- e. assurance that the trainee has demonstrated competency in specified tasks prior to job assignment

Response

The on-the-job training for non-licensed operators is being improved in two ways: (1) the skills manual for each position is being revised to be more definitive of the requirements to be met, and (2) those personnel qualified to conduct on-the-job training and to sign trainee manuals will be designated. These actions will be complete by June 1, 1983.

LICENSED OPERATOR TRAINING AND QUALIFICATION

PERFORMANCE OBJECTIVE: The licensed operator training and qualification program should develop and improve the knowledge and skills necessary to perform assigned job functions.

**Finding
(TQ.3-1)**

Improvements are needed in the administration of the licensed operator requalification examinations. Specific areas needing improvement are diversity of examination content, timeliness of administering examinations, and implementation of remedial training.

Recommendation

Improve the identification and implementation of remedial training and the timeliness of administering requalification examinations. Develop a program to diversify examination content to ensure objective assessment of operator knowledge.

Response

Licensed operator requalification examinations will be prepared so that a diversity of examination content is provided. Examinations will be scheduled and graded such that required accelerated retraining will be identified in a timely manner. The program will be completed before the 1983 requalification testing is initiated.

MAINTENANCE PERSONNEL TRAINING AND QUALIFICATION

PERFORMANCE OBJECTIVE: The maintenance personnel training and qualification program should develop and improve the knowledge and skills necessary to perform assigned job functions.

- Finding**
(TQ.5-1) **Plant-specific training programs are needed for maintenance personnel permanently assigned to Peach Bottom.** The generic task-analysis-based programs currently implemented for the various maintenance positions do not cover areas such as overall plant operations and plant-specific systems and equipment.
- Recommendation** Expand the on-site maintenance training programs to include plant-specific topics such as overall plant operations and plant systems and equipment. INPO documents "Guidelines for Mechanical Maintenance Personnel Qualification" (GPG-05), "Guidelines for Electrical Maintenance Personnel Qualification" (GPG-07), and "Guidelines for Instrument and Control Technician Qualification" (GPG-08) could be of assistance in this effort.
- Response** The maintenance training program will be expanded to include familiarization training in plant systems and operations for maintenance personnel permanently assigned to Peach Bottom. This will be done by January 1, 1984.
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RADIOLOGICAL PROTECTION**RADIOLOGICAL PROTECTION ORGANIZATION AND ADMINISTRATION**

PERFORMANCE OBJECTIVE: The organization and administrative systems should ensure effective control and implementation of the radiological protection program.

**Finding
(RP.1-1)**

Station personnel do not always comply with radiological protection procedures and requirements. The following examples were observed:

- a. radiation exposures were not minimized as described by station procedure HPO-10
- b. improper placement of whole-body dosimetry devices
- c. failure to read pocket ion chambers in high radiation areas
- d. failure to follow posted instructions for the use of the portal monitor when exiting the station

Recommendation

Emphasize to all station personnel the necessity for adhering to radiological protection procedures and requirements. Require supervisory personnel, especially those in maintenance and operations, to take an active role in enforcing these requirements. The need to adhere to proper radiological protection practices should be stressed in station training.

Response

The plant superintendent has re-emphasized to all site personnel the necessity of complying with the radiological protection procedures and requirements. Supervisory personnel have been instructed to take a more active role in the enforcement of these nuclear rules and will be held accountable for those personnel reporting to them. Infractions are considered serious and are cause for immediate application of the company's discipline program. This could include denial of access to the power plant until an investigation of the infraction has been concluded and appropriate action taken. Additionally, the importance of following the radiological procedures will be more strongly addressed in the general employee training program.

Finding (RP.1-2)	Improvements are needed in the review of radiological incidents. Health Physics Investigation Reports are not routinely reviewed by management to determine the cause of problems. Corrective actions often address only the symptoms.
Recommendation	Implement a system to ensure that results of Health Physics Investigation Reports are trended and evaluated by management to prevent recurrence of similar radiological incidents.
Response	A Corrective Action Program already implemented will investigate, evaluate, and trend these incidents and effectively address the causes of problems.

GENERAL EMPLOYEE TRAINING IN RADIOLOGICAL PROTECTION

PERFORMANCE OBJECTIVE: General employee training should ensure that plant personnel, contractors, and visitors have the knowledge and practical abilities necessary to effectively implement radiological protection practices associated with their work.

Finding (RP.3-1)	Employees are not required to demonstrate practical abilities such as donning and removal of protective clothing, proper frisking techniques, and use of step-off pads, during general employee training.
Recommendation	Expand the general employee training program to include demonstration of practical abilities in radiological protection for all personnel who work in radiologically controlled areas at the station.
Response	The general respiratory training (GRT) program, which is the training program that addresses the use of anti-contamination clothing and the use of respirators, will be expanded to include a practice session demonstrating donning anti-contamination clothing and undressing across step-off pads and multiple step-off pads. This will be accomplished by June 1, 1983. Proper frisking techniques will be demonstrated by all individuals in the general employee training program. This will be accomplished by January 1, 1983.

INTERNAL RADIATION EXPOSURE

PERFORMANCE OBJECTIVE: Internal radiation exposure controls should minimize internal exposures.

Finding (RP.5-1)	Personnel are not always whole-body counted at the frequency specified by station procedures. As a result, the effectiveness of the internal exposure control program is not adequately monitored. Some personnel who perform work in areas with the potential for the inhalation of airborne radioactivity have not been whole-body counted for several years.
Recommendation	Ensure that personnel are whole-body counted as required by station procedures.
Response	Individuals on site will be classified according to their potential (work locations, functions, etc.) for inhaling airborne contamination. This classification will then be used to establish frequencies for whole-body counting with appropriate shorter intervals assigned for high potential work groups. This will be completed by February 1, 1983. A printout of the scheduled whole-body counts will be made on an individual basis and monitored similar to the GET/GRT "deficient" list by May 1, 1983. Enforcement will also be similar in that the deficient employee's badge will be pulled after an appropriate grace period.

PERSONNEL DOSIMETRY

PERFORMANCE OBJECTIVE: The personnel dosimetry program should ensure that radiation exposures are accurately determined and recorded.

Finding (RP.8-1)	The personnel dosimetry program needs to be strengthened to ensure that radiation exposures assigned to individuals as a result of badge discrepancy evaluations are accurately determined and recorded. In some cases, these radiation exposure determinations are not sufficiently documented or contain clerical errors that affect the recorded exposures.
Recommendation	Improve the program for determining radiation exposures and documenting the results in these instances.
Response	The responsibility for investigating and determining the proper dose to be assigned to an individual has been assigned to qualified health physics personnel. The evaluation, documentation, and assigned dose are reviewed and approved by the dosimetry group supervisor.

RADIOACTIVE CONTAMINATION CONTROL

PERFORMANCE OBJECTIVE: Radioactive contamination controls should minimize the contamination of areas, equipment, and personnel.

- Finding**
(RP.9-1) **Personnel monitoring practices for the detection of skin and clothing contamination need to be upgraded to prevent the spread of contamination to clean areas of the plant and off site.** On a few occasions, workers were found to have significant levels of contamination on their skin or clothing at the security building exit. In addition, workers who had not entered posted contaminated areas have been found with skin or clothing contamination.
- Recommendation** Enforce the existing procedure that requires whole-body monitoring at the exit of contaminated areas. In those cases where monitoring cannot be done at the exit of a contaminated area, ensure that monitoring is accomplished at the closest monitoring station.
- Response** Permanent friskers have been stationed throughout the plant to facilitate thorough whole-body frisks by all personnel who have exited contaminated areas. Those friskers in high background areas have been identified to engineering for installation of shielding. Until shielding is provided, signs will be posted by January 1, 1983 to direct personnel to the nearest frisker in a low background area. The main exit from the power block will be supplied with new, highly sensitive portal monitors by February 1, 1983. GET will further stress the need for employees to perform the necessary whole-body frisks. The Corrective Action Program will further ensure that those who do not respect the program will be dealt with appropriately.
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- Finding**
(RP.9-2) **Personnel skin and clothing contaminations are not always reported, investigated, and tracked to identify and correct causes.** Present reporting methods primarily serve to document decontamination results.
- Recommendation** Implement a program that requires notification of health physics personnel of all skin or clothing contamination incidents and ensures that records are kept of these incidents. A review of these incidents should be performed by health physics management to determine and correct the causes of problems.
- Response** Personnel found to be contaminated will be required to report to health physics. These contamination incidents will be documented and investigated, and the cause determined and corrected.
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Finding
(RP.9-3) **Doors at the boundaries of potentially contaminated areas and airborne radioactivity spaces are sometimes left open.** The roll-up doors in the radioactive waste building and turbine building were open for extended periods of time when the potential existed for the release of airborne radioactivity to the environment.

Recommendation Implement a program to ensure that doors at the boundaries of potentially contaminated and airborne radioactivity areas are closed except when required to be open for plant operations.

Response Signs will be located at these doors to provide direction that the doors must be kept closed at all times except when necessary for transporting equipment or material. Additionally, no compacting of waste will be permitted when the radwaste building roll-up door is open. These actions will be accomplished by February 1, 1983.

Finding
(RP.9-4) **The method used to measure loose surface radioactive contamination levels on items to be released off site is not sufficiently sensitive to detect contamination levels at plant limits.**

Recommendation Re-evaluate the method used for determining loose surface radioactive contamination levels on items to be released off site. Based on the results of this evaluation, implement changes to ensure that plant release limits are met.

Response Disc smears instead of large area cloth swipes will be used in making such determinations in the future. This method for determining loose contamination will provide increased sensitivity and ensure that plant release limits are met. This method will be implemented by February 1, 1983.

CHEMISTRY

CHEMISTRY ORGANIZATION AND ADMINISTRATION

PERFORMANCE OBJECTIVE: The organization and administrative systems should ensure effective implementation and control of the chemistry program.

Finding (CY.1-1)	Chemistry data are not reviewed and evaluated for trends and problems in a timely manner by chemistry supervision. Trend plotting of chemistry data is typically done two weeks or longer after it is generated.
Recommendation	Establish requirements for more frequent review and trend evaluation of chemistry data by chemistry supervision.
Response	Chemistry and counting room data are plotted each working day. The plots incorporate action levels to flag data that are outside of desired ranges. Weekly review of the data to determine trends is being performed by chemistry supervisory personnel.

CHEMISTRY PERSONNEL QUALIFICATION

PERFORMANCE OBJECTIVE: The chemistry qualification program should ensure that chemistry personnel have the knowledge and practical abilities necessary to implement chemistry practices effectively.

Finding (CY.2-1)	The chemistry technician training program does not ensure an adequate understanding of system chemistry parameters. For example, some technicians did not understand the reason for chemistry limits or the significance of changing chemistry parameters.
Recommendation	Upgrade the chemistry technician training program to ensure that technicians have an adequate understanding of system chemistry parameters.
Response	Chemistry technician training is currently under review to ensure that technicians are given adequate training in the systems monitored and applicable chemistry parameters. Any changes determined to be required will be incorporated by June 1, 1983.

CHEMISTRY CONTROL

PERFORMANCE OBJECTIVE: Chemistry controls should ensure optimum chemistry conditions during all phases of plant operation.

Finding
(CY.3-1)

Several problem areas were noted in the storage of laboratory chemicals. Examples include the following:

- a. Flammable chemicals in the chemistry laboratory are not stored in fireproof storage cabinets.
- b. Quantities of old chemicals that are not used by the chemistry group are stored in the chemistry laboratory.
- c. Hazardous chemicals are stored in an area that does not have drains, eye wash, or safety shower.

Recommendation

Provide improved storage of laboratory chemicals. The following National Fire Protection Association Standards could be of assistance:

- a. Pamphlet 30, "Flammable Liquid Storage"
- b. Pamphlet 49, "Hazardous Chemical Storage"
- c. Pamphlet 491m, "Hazardous Chemical Reactions"

Response

All laboratory chemicals stored in the plant have been inventoried, and all flammable and hazardous chemicals are properly stored. A review of the flammable and hazardous chemicals will be conducted to determine those that are not needed. Those that are not needed will then be properly disposed of. These actions will be completed by November 30, 1982. Hazardous chemicals will not be stored in areas without eyewashes or safety showers. Chemistry supervision will perform an inventory and review of storage areas on at least a yearly basis to ensure that the above practices are continued.

Finding
(CY.3-2)

The storage, issue, use, and disposal of trichlorethane is not properly controlled. Containers of trichlorethane were observed at several uncontrolled locations in the plant. In addition, controls that had recently been implemented to prevent this chemical from being added to the condensers were not being enforced.

Recommendation

Establish tighter controls on the storage, issue, use, and disposal of trichlorethane.

Response A survey of the plant will be performed to identify and dispose of trichlorethane containers that were in the power block prior to the institution of recent controls. Controls preventing the addition of this chemical to the condenser will be re-emphasized. This will be completed by February 1, 1983.

Finding (CY.3-3) **Several on-line chemistry monitors are not calibrated using standards or are nonfunctional.** On-line monitors are not routinely used to evaluate plant conditions.

Recommendation Establish a program for calibration, maintenance, and use of plant on-line chemistry monitors. This program should include the repair or replacement of nonfunctional monitors. On-line monitors should be used routinely to evaluate plant conditions.

Response Readily correctable on-line chemistry monitor problems will be corrected and all functional monitors will be incorporated in a calibration program. All other monitors will be modified or replaced and will be included in the calibration program. These actions will be completed by June 1, 1983, and the on-line chemistry monitors will be used to evaluate plant conditions.

Finding (CY.3-4) **Plant data indicate that copper is being deposited in plant feedwater heaters.** Similar data for other metals such as iron, nickel, and chromium are not available for evaluation.

Recommendation Accurately measure the concentration of copper and other metals in the condensate, feedwater, and reactor coolant systems. Use this data to identify problems in system components such as condensate demineralizers and feedwater heaters. Evaluate the possible effects on the plant of high metallic concentrations. Formulate plans for corrective action as necessary.

Response A study of the metal content in the condensate, feedwater, and reactor coolant systems and its effect on heat cycle and reactor component performance will be undertaken. The results will be used to determine if any changes to equipment operation, maintenance, chemistry monitoring, or chemistry treatment is necessary. A status report on this study will be available by July 1, 1983.

Finding (CY.3-5) High oxygen concentrations at the condensate pump discharge indicate excessive air leakage into Unit 3 "C" condenser or "A" condensate pump. This condition has existed since early 1982.

Recommendation Determine the source of air leakage and take appropriate corrective actions.

Response One leak has been identified on Unit 3. Further investigation is planned at low power levels and during future outages to minimize personnel exposure.

Finding (CY.3-6) Some plant systems are routinely operated outside of the vendor-recommended chemistry limits. Examples of these systems and parameters include the following:

- a. auxiliary boiler (sulfite, phosphate)
- b. plant closed cooling water system (sodium nitrite)
- c. feedwater system (copper)

Recommendation Ensure that out-of-specification chemistry conditions are identified and corrected in a timely manner.

Response A feedback mechanism has been developed to initiate re-analysis after chemicals are added. The results of this re-analysis will be used to ensure that chemistry is maintained within specifications.

Finding (CY.3-7) There is oil leakage into various plant chilled water systems. Sources have not been determined, nor have plans been formulated to correct this problem.

Recommendation Determine the sources of oil leakage into the chilled water systems, and formulate plans for corrective action.

Response A small leak did exist on the Unit 2 drywell chilled water system during a recent shutdown period. The oil was removed and the leak was fixed. Sampling to detect oil is now performed on a weekly basis on all chilled water systems and the results are reported, tracked, and corrective action taken as necessary.

LABORATORY ACTIVITIES

PERFORMANCE OBJECTIVE: Laboratory and counting room activities should ensure accurate measuring and reporting of chemistry parameters.

Finding (CY.4-1)	The quality control program for the chemistry laboratory needs to be improved to ensure that analyses are performed with the required degree of accuracy.
Recommendation	Upgrade the chemistry quality control program including consideration of the following items: <ol style="list-style-type: none"> a. increasing the frequency of split samples b. ensuring that split sample concentrations are comparable to routine plant samples c. using spiked samples to test the performance of analysts d. using expiration dates on reagents, standards, and chemicals e. trending and evaluating quality control data f. performing frequent analyses of standards in conjunction with sample analyses
Response	Split sample frequency will be increased. Split sample concentrations will be comparable to routine plant samples. Controls of standard and chemical reagents will be instituted to ensure that those with expired dates are not used. This program will be initiated by June 1, 1983.

Finding (CY.4-2)	The method used for chloride analysis does not have the accuracy and precision to measure concentrations at limits specified in plant procedures.
Recommendation	Evaluate state-of-the-art methods for chloride analysis and incorporate a method that provides the required accuracy and precision when analyzing in the low parts-per-billion range.
Response	A new specific electrode has been purchased and installed. The electrode is designed to provide acceptable accuracy and precision measurements. Testing is now in progress and a procedure will be implemented by March 1, 1983.

Finding (CY.4-3)	A preventive maintenance program is needed for laboratory instruments. The following are examples of equipment that should be included: <ul style="list-style-type: none">a. millivolt metersb. pH metersc. spectrophotometersd. atomic absorption spectrophotometer
Recommendation	Develop and implement a preventive maintenance program for laboratory equipment. This program should incorporate the preventive maintenance sections from instrument technical manuals.
Response	A preventive maintenance program for laboratory instrumentation will be developed and implemented by June 1, 1983.

CHEMICAL AND LABORATORY SAFETY

PERFORMANCE OBJECTIVE: Work practices associated with chemistry activities should ensure the safety of personnel.

Finding (CY.5-1)	Safety equipment such as lab coats, gloves, and safety glasses are not routinely used when working with hazardous chemicals.
Recommendation	Establish and enforce requirements that define the protective equipment to be used when working with hazardous chemicals.
Response	The importance of using safety equipment such as lab coats, gloves, and safety glasses has been impressed upon all laboratory personnel. Additional equipment has been provided where appropriate. Standard laboratory practices will require the use of safety equipment.

APPENDIX I

Summary of Outstanding Response Action from Previous Evaluation (1980)

ORGANIZATION STRUCTURE

(INPO Procedure OA-102, Revision 2)

2. **Finding** (Ref. Criterion B)

Position descriptions which define authority, responsibility and accountability have not been prepared for many positions at the station. There are some position descriptions in existence, but these are based primarily on regulatory requirements rather than on job analyses. It was noted that a 1980-81 objective for each senior engineer on the plant staff is to prepare position descriptions through the supervisory engineer level. This has been initiated.

Recommendation

Position descriptions which describe the authority, responsibility and accountability of assigned individuals should be prepared for each authorized position at Peach Bottom. INPO is coordinating an industry-wide job analysis project for certain operator, maintenance and technician positions and their immediate supervisors.

Response

Philadelphia Electric Company will prepare position descriptions to define authority, responsibility, and accountability for all exempt positions, and for other positions not included in the industry project by March 1982. When the results of the industry-wide job analysis are available, Philadelphia Electric will prepare descriptions for the remaining positions at the station. A schedule will be established for these positions when the industry-wide project is completed.

Status

Position descriptions are being prepared as described in the response. All position descriptions will be completed by December 31, 1982.

PERSONNEL QUALIFICATIONS

(INPO Procedure OA-108, Revision 1)

1. **Finding** (Ref. Criterion A)

Written qualification requirements are not available for many positions. The qualification requirements which do exist are often based on regulatory requirements rather than on job analysis of the position.

Recommendation

Qualification requirements should be developed for each position at the station based on the authorities, responsibilities and accountabilities assigned to the position. This work should be coordinated with the position description effort discussed in the organization structure area.

Response

Qualification requirements for all positions will be established as part of the position description effort discussed in Finding OA-102, Criterion B. The scheduled completion dates are the same.

- Status**
Position descriptions, including qualification requirements, are being prepared as described in the response. All position descriptions will be completed by December 31, 1982.
3. **Finding (Ref. Criterion E)**
Some personnel assignments are not consistent with the formal training which they receive. The auxiliary operator's training is principally related to the turbine side systems. He is, however, routinely assigned some tasks in the reactor building.
- Recommendation**
Ensure field operators are properly trained for stations to which they are assigned.
- Response**
Action will be taken to modify the training programs or restrict operator assignments such that the training, qualification and assignments of operators are compatible. These actions will be completed by June 1981.
- Status**
The action identified in the response is now scheduled to be completed by July 1, 1983.

TRAINING RESOURCES

(INPO Procedure TQ-221, Revision 2)

- Finding (Ref. Criteria A and D)**
There is a shortage of classrooms for the training which is routinely scheduled. The available classrooms are small, cluttered, and frequently noisy. The heating, ventilation and lighting systems do not support efficient instruction. There is also a shortage of adequate training support facilities such as offices, reference and study areas and file space.
- Recommendation**
Training classroom and support facility requirements should be evaluated in light of current and projected training activities. The plans now in progress for expansion of the administrative building should be reviewed to ensure that problems identified by the evaluation will be corrected when the building is completed.
- Response**
Plans for expansion of the administration building are in review to ensure that facilities required will be adequate to meet the training requirements. Interim measures, such as increased use of Unit No. 1 Administration Building for classroom presentations and improvement of the quality of the Unit 1 facility are being implemented. Permanent Unit 1 training facility improvements and fixtures acquisition will be completed by September 1981.
- Status**
Action will be complete when the new administration building is completed in January 1984. The building is under construction.

PREVENTIVE MAINTENANCE

(INPO Procedure MA-402, Revision 1)

Finding (Ref. Criteria A, B & C)

The administrative procedure governing the Preventive Maintenance Program (A-25, Rev. 1) does not adequately define the objective, scope and adjustment features of the program. It should be noted that the development of a more comprehensive program had previously been identified by station maintenance as one of the Peach Bottom goals for 1980-81, and a revision to A-25 had been drafted. This revision was in the review and approval process, and thus was not evaluated to determine if Criteria A, B and C would be met.

Recommendation

Management should continue development of a comprehensive program description and administrative control procedure for the preventive maintenance program. The content of the program should include the elements of Criteria A, B and C.

Response

Peach Bottom has had an informal preventive maintenance program for many years, including a formal lubrication program which has been quite successful in avoiding maintenance caused by improper lubrication. As indicated, one of the Peach Bottom goals for 1980-81 is to provide elements of a complete formal program. The formal preventive maintenance program will be fully implemented by December 1982.

Status

The station preventive maintenance program has a Computerized History and Maintenance Planning System (CHAMPS) installed. This software is presently being verified and data is being loaded into the Engineering Data Base. Scheduled preventive maintenance, as determined by equipment priorities, is being identified on forms for input into the system. The system is expected to be functional in January 1983.

MAINTENANCE PROCEDURES

(INPO Procedure MA-403, Revision 2)

Finding (Ref. Criterion A)

While approved procedures exist for most work activities, some maintenance and instrument and control work is performed using vendor manuals that are not approved or controlled. Maintenance engineering personnel were aware of this lack of control and are incorporating instruction manual information into procedures to ensure necessary reviews and controls. No similar effort is underway in the Instrument and Control Department.

Recommendation

The Maintenance Engineering Department should complete revisions to controlled procedures to incorporate required vendor manual information. The Instrument and Control Department should review work activities and institute review and control of those vendor manuals that will be used in the performance of safety related or critical balance-of-plant work.

Response

Maintenance Engineering Department procedure revisions will be completed in a priority sequence based on frequency of usage and reliance on technical manual material. Higher priority revisions will be completed by the end of 1981. All necessary revisions will be completed by the end of 1982.

I&C vendor manuals are updated with new and revised information when it is received. A reference-marked set of updated manuals will be established by May 1981. A procedure will be implemented to require use of only this marked set of manuals or authorized current extracts from these manuals.

Status

Initial response indicated Maintenance Engineering Department higher priority revisions would be completed by the end of 1981 and that all necessary revisions would be completed by the end of 1982. Higher priority procedures are approximately 75 percent complete. It is expected that all procedures will be completed by December 31, 1983.

MAINTENANCE HISTORY

(INPO Procedure MA-405, Revision 2)

Finding (Ref. Criteria B, C, D, E)

While a variety of records are being retained by various groups within the Maintenance Division and the Test Branch, no uniformly applied program for recording and evaluating maintenance history information has been established.

Recommendation

A formal maintenance history program should be established and utilized to evaluate and trend equipment performance. History information should also be used to adjust the Preventive Maintenance Program.

Response

As indicated in the MA-402 response, a formal preventive maintenance program will be fully implemented by December 1982. Elements of this program will address the methods of documentation, traceability, retrievability and evaluation of equipment maintenance histories. The periodic review and evaluation of maintenance history will integrate and use inputs such as NPRDS and LER data, the records retention/retrieval system capabilities (currently under development), test data and trending plots. Maintenance history features will be described in the approved preventive maintenance program.

Status

The station maintenance history program uses the CHAMPS system, which has been installed. The program software is being verified and data is being accumulated in the Engineering Data Base. History information on preventive and corrective maintenance activities will be accumulated as part of the CHAMPS history documentation. It is expected that implementation will be achieved in January 1983.

MAINTENANCE FACILITIES AND EQUIPMENT
(INPO Procedure MA-408, Revision 1)

1. **Finding** (Ref. Criterion C)

Office and work space for Mechanical Maintenance groups is not adequately sized and arranged to accommodate orderly, efficient work and storage. Lack of tool storage space in the mechanical shop, the scattered location of various craft work areas and overcrowding in the Mechanical Maintenance Foreman's office lead to reduced efficiency and hinder effective supervision. The need for additional space was already recognized by Maintenance group personnel.

Recommendation

Overcrowding in the foreman's office should be alleviated as soon as practical. Additional work and storage space should be provided for maintenance group activities as part of the planned administration building expansion program.

Response

As noted, the company has recognized the need for additional work, storage and office space to eliminate overcrowded conditions. Sufficient space will be provided in a new administration building. Improved storage and control of tools is a part of this plan. This addition is scheduled for completion by November 1982.

Status

A plan has been developed and construction has started on the new facilities to improve work, storage, and office spaces. The initial estimate indicated completion of improvements would be November 1982. The revised estimated date for completion and occupancy of the new facilities is January 1984.

2. **Finding** (Ref. Criterion E)

The mechanical shop and tool storage area on the ground floor of the Administration Building was not maintained in a clean, orderly manner. Good housekeeping practices were not being used.

Recommendation

Improved storage facilities should be provided in the shop for frequently used spare parts. Housekeeping should be improved in the shop and tool storage area. The responsibility for shop housekeeping should be specifically assigned.

Response

The overcrowded shop conditions, dispersed group and supervisory work locations complicate good housekeeping practices in the shop and tool storage area. An on-site individual in the Maintenance Division has been assigned specific responsibility for this improvement. For the long term, the expansion of the shop facilities by November 1982, along with centralized trade group supervision, will materially assist in maintaining proper housekeeping.

Status

A plan has been developed and construction has started on the new facilities to improve work, storage, and office spaces. The initial estimate indicated completion of improvements would be November 1982. The revised estimated date for completion and occupancy of the new facilities is January 1984.

ALARA PROGRAM

(INPO Procedure RC-502, Revision 1)

Finding (Ref. Criteria A, C, D & E)

There is no management policy statement regarding the implementation of ALARA concepts. There is no formal ALARA program approved by management. Therefore, there is no system for establishing ALARA goals or ensuring that all areas of design, operation, maintenance, and training are reviewed for ALARA considerations.

Recommendation

The company should establish a highly visible policy showing an intention to keep exposures as low as reasonably achievable.

Response

The concept of minimizing radiation exposure has been a part of the radiation protection program at Peach Bottom since the beginning of operation. The station is in the process of developing a formal program which will address improved ALARA considerations in the operation, maintenance and training areas. This formal program will be in effect by January 1982. In addition we will revise the policy statement in the company radiation handbook (Refer to Finding OA-102, Criterion D) to reflect Philadelphia Electric Company's commitment to the ALARA concept by December 1981.

Status

The formal ALARA program is not fully implemented. This formal program will be in effect by March 1983.

WASTE AND DISCHARGE CONTROL

(INPO Procedure RC-505, Revision 2)

Finding (Ref. Criterion F)

In general, management should strive to improve the overall effectiveness of the radwaste program through continual emphasis on volume reduction and by ensuring that activities affecting the radwaste program are coordinated with the various departments involved in radwaste management.

Recommendation

Overall goals for the radwaste program should be established, and the assignment of radwaste responsibilities of the various departments should ensure that the goals will be met.

There should be continual emphasis on identifying the sources of radwaste and evaluating how these sources may be eliminated, on identifying the cause for personnel exposures associated with radwaste and on monitoring the overall efficiency of the radwaste program.

Response

In order to further evaluate sources of, and emphasize reduction of solid radwaste inputs, an individual will be assigned this responsibility. Recent efforts in this area include significant reduction of resins applied to both condensate and Reactor Water Clean Up (RWCU) demineralizers, where water chemistry permits, and development and demonstration of a process to dispose of large volumes of oily liquid radwaste. Newly

implemented procedures and the use of a radwaste quality control inspector in the handling and packaging of solid radwaste will lead to improvements in the overall operation. Identification and reduction, where possible, of the causes of personnel exposure related to radwaste operations will be incorporated in the formal ALARA program addressed in the response to Finding RC-502, criteria A, C, D and E.

Status

A committee has been established to evaluate and make recommendations to address the management of radioactive waste at the station. A formal radioactive waste reduction program will be fully implemented by June 1983.

APPENDIX II

Performance Objectives Reviewed

ORGANIZATION AND ADMINISTRATION

OA.1 Station Organization and Administration

Station organization and administrative systems should ensure effective implementation and control of station activities.

OA.2 Mission, Goals, and Objectives

Station mission, goals, and objectives should be established and progress monitored through a formal program.

OA.3.1 Management Assessment

Management should assess and monitor station activities to ensure effective performance of all aspects of nuclear plant operation.

OA.3.2 Quality Programs

Quality programs should ensure the effective performance of activities important to nuclear safety.

OA.4 Personnel Planning and Qualification

Personnel programs should ensure that station positions are filled by individuals with proper job qualifications.

OA.5 Industrial Safety

Station industrial safety programs should achieve a high degree of personnel safety.

OA.6 Document Control

Document control systems should provide correct, readily accessible information to support station requirements.

OA.7 On-site Nuclear Safety Review Committee

Review of station nuclear activities by a knowledgeable interdisciplinary group should ensure achievement of a high degree of nuclear safety.

OPERATIONS

OP.1 Operations Organization and Administration

The operations organization and administrative systems should ensure effective control and implementation of department activities.

OP.2 Conduct of Operations

Operational activities should be conducted in a manner that achieves safe and reliable plant operation.

OP.3 Plant Status Controls

Operational personnel should be cognizant of the status of plant systems and equipment under their control, and should ensure that systems and equipment are controlled in a manner that supports safe and reliable operation.

OP.4 Operations Knowledge and Performance

Operator knowledge and performance should support safe and reliable plant operation.

OP.5 Operations Procedures and Documentation

Operational procedures and documents should provide appropriate direction and should be effectively used to support safe operation of the plant.

OP.6 Operations Facilities and Equipment

Operational facilities and equipment should effectively support plant operation.

MAINTENANCE

MA.1 Maintenance Organization and Administration

The maintenance organization and administrative systems should ensure effective control and implementation of department activities.

MA.2 Plant Material Condition

The material condition of the plant should be maintained to support safe and reliable plant operation.

MA.3 Work Control System

The control of work should ensure that identified maintenance actions are properly completed in a safe, timely, and efficient manner.

MA.4 Conduct of Maintenance

Maintenance should be conducted in a manner that ensures efficient and effective plant operation.

MA.5 Preventive Maintenance

The preventive maintenance programs should contribute to optimum performance and reliability of plant equipment.

MA.6 Maintenance Procedures and Documentation

Maintenance procedures should provide appropriate directions for work and should be used to ensure that maintenance is performed safely and efficiently.

MA.7 Maintenance History

The maintenance history should be used to support maintenance activities and optimize equipment performance.

MA.8 Maintenance Facilities and Equipment

Facilities and equipment should effectively support the performance of maintenance activities.

TECHNICAL SUPPORT

TS.1 Technical Support Organization and Administration

The technical support organization and administrative systems should ensure effective control and implementation of department activities.

TS.2 Surveillance Testing Program

Surveillance inspection and testing activities should provide assurance that equipment important to safe and reliable plant operation will perform within required limits.

TS.3 Operations Experience Review Program

Industrywide and in-house operating experiences should be evaluated and appropriate actions undertaken to improve plant safety and reliability.

TS.4 Plant Modifications

Plant modification programs should ensure proper review, control, implementation, and completion of plant design changes in a safe and timely manner.

TS.5 Reactor Engineering

On-site reactor engineering activities should ensure optimum nuclear reactor operation without compromising design or safety limits.

- TS.6 Plant Efficiency and Reliability Monitoring
Performance monitoring activities should optimize plant thermal performance and reliability.
- TS.7 Technical Support Procedures and Documentation
Technical support procedures and documents should provide appropriate direction and should be effectively used to support safe operation of the plant.

TRAINING AND QUALIFICATION

- TQ.1 Training Organization and Administration
The training organization and administrative systems should ensure effective control and implementation of training activities.
- TQ.2 Non-Licensed Operator Training and Qualification
The non-licensed operator training and qualification program should develop and improve the knowledge and skills necessary to perform assigned job functions.
- TQ.3 Licensed Operator Training and Qualification
The licensed operator training and qualification program should develop and improve the knowledge and skills necessary to perform assigned job functions.
- TQ.4 Shift Technical Advisor Training and Qualification
The shift technical advisor training program should develop and improve the knowledge and skills to perform assigned job functions.
- TQ.5 Maintenance Personnel Training and Qualification
The maintenance personnel training and qualification program should develop and improve the knowledge and skills necessary to perform assigned job functions.
- TQ.6 Technical Training for Managers and Engineers
The technical training program for engineers and managers should broaden overall knowledge of plant processes and equipment as a supplement to position-specific education and training.
- TQ.7 General Employee Training
The general employee training program should develop a broad understanding of employee responsibilities and safe work practices.

TQ.9 Training Facilities and Equipment

The training facilities, equipment, and materials should effectively support training activities.

RADIOLOGICAL PROTECTION

RP.1 Radiological Protection Organization and Administration

The organization and administrative systems should ensure effective control and implementation of the radiological protection program.

RP.2 Radiological Protection Personnel Qualification

The radiological protection qualification program should ensure that radiological protection personnel have the knowledge and practical abilities necessary to effectively implement radiological protection practices.

RP.3 General Employee Training In Radiological Protection

General employee training should ensure that plant personnel, contractors, and visitors have the knowledge and practical abilities necessary to effectively implement radiological protection practices associated with their work.

RP.4 External Radiation Exposure

External radiation exposure controls should minimize personnel radiation exposure.

RP.5 Internal Radiation Exposure

Internal radiation exposure controls should minimize internal exposures.

RP.6 Radioactive Effluents

Radioactive effluent controls should minimize radioactive materials released to the environment.

RP.7 Solid Radioactive Waste

Solid radioactive waste controls should minimize the volume of radioactive waste and ensure safe transportation of radioactive material.

RP.8 Personnel Dosimetry

The personnel dosimetry program should ensure that radiation exposures are accurately determined and recorded.

RP.9 Radioactive Contamination Control

Radioactive contamination controls should minimize the contamination of areas, equipment, and personnel.

CHEMISTRY

CY.1 Chemistry Organization and Administration

The organization and administrative systems should ensure effective implementation and control of the chemistry program.

CY.2 Chemistry Personnel Qualification

The chemistry qualification program should ensure that chemistry personnel have the knowledge and practical abilities necessary to implement chemistry practices effectively.

CY.3 Chemistry Control

Chemistry controls should ensure optimum chemistry conditions during all phases of plant operation.

CY.4 Laboratory Activities

Laboratory and counting room activities should ensure accurate measuring and reporting of chemistry parameters.

CY.5 Chemical and Laboratory Safety

Work practices associated with chemistry activities should ensure the safety of personnel.