APPENDIX D

QUALITY ASSURANCE PROGRAM

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APPENDIX D

QUALITY ASSURANCE PROGRAM

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D.11 Philadelphia Electric Company Operations Phase Quality Assurance Program (format from NRC Standard Review Plan, Section 17, NUREG 75/087)

17.2.1 Organization - (Exhibit I)

The Philadelphia Electric Company corporate structure is shown on the Company Organization Chart. The twelve departments are directed by Vice Presidents who report to the Office of the Chief Executive. The following Departments are involved in quality assurance related activities for PBAPS: Nuclear Power, Electric Production, Engineering & Research, Purchasing & General Services, Personnel and Industrial Relations, Finance and Accounting, and Legal.

17.2.1.1 Office of the Chief Executive

The Chairman of the Board and the Chief Executive Officer, and the President and Chief Operating Officer comprise the Office of the Chief Executive. The President of PECo has the ultimate responsibility for the Quality Assurance Program. The President delegates to the Vice President - Electric Production Department and the Vice President - Engineering and Research Department, the responsibilities for instituting and maintaining the QA programs. The Senior Vice President - Nuclear Power acts as the direct agent of executive management in implementing company policies relating to nuclear power and in ensuring their accomplishment.

17.2.1.2 Electric Production Department - (Exhibit II)

The Department is under the direction of the Vice President - Electric Production, assisted by the Manager, Nuclear Production and the Manager, Fossil-Hydro Production. They are responsible for the operation and maintenance of the Company's electric generation facilities and the establishment of Electric Production Department's Quality Assurance program, goals and objectives.

The Electric Production Department is composed of six Divisions: Nuclear Generation, Fossil - Hydro Generation, Quality Assurance, Services, Maintenance and System Operation.

The Electric Production Department is responsible for Quality Assurance of plant operation from the acceptance of each system from AE/Constructor (Startup Phase), at least 90 days prior to initiation of fuel loading, through the life of the plant. The Department is responsible for all phases of operation and maintenance. The Department is supplied procurement services, engineering design services, and other support functions from other Philadelphia Electric Company Departments. The Department, itself, is divided into functional units, thereby allowing centralization of expertise, which also provides economics of operation. This centralization lends itself to Quality Assurance activities, since it provides, in varied fields, checks and balances by organizations who are administratively independent of each other.

17.2.1.2.1 Nuclear Generation Division

The Nuclear Generation Division is under the direction of a Superintendent, who reports to the Manager, Nuclear Production. The Nuclear Generation Division is comprised of Nuclear Generating Stations (PBAPS and LGS) and Nuclear Services. Nuclear Services is under the direction of a Superintendent, who reports to the Superintendent of Nuclear Generation, and is composed of six Sections; Licensing, Nuclear Safety, Nuclear Training, Radiation Protection, Emergency Preparedness, and Fuel Management.

17.2.1.2.1.1 Licensing Section

The Licensing Section is under the supervision of the Engineer-in-Charge, who reports to the Superintendent, Nuclear Services. The Section is responsible for: licensing; other regulatory matters; and special projects relating to the operation and safety of the nuclear generating stations.

17.2.1.2.1.2 Nuclear Safety Section

The Nuclear Safety Section is under the supervision of the Engineer-in-Charge, who reports to the Superintendent, Nuclear Services, on matters of a routine nature, and to the Chairman of the Nuclear Review Board (NRB) on matters of a safety-related nature. The Section is responsible for independently examining the safety-related activities at the nuclear plants operated by the Philadelphia Electric Company, and providing support to the NRB. The Nuclear Safety Section consists of three groups; a corporate Independent Safety Engineering Group (ISEG), and an onsite ISEG at LGS and PBAPS.

17.2.1.2.1.3 Radiation Protection Section

The Radiation Protection Section, under the supervision of a Director, who reports to the Superintendent, Nuclear Services, has the primary responsibility for overview and consultation for the corporate radiation protection program.

17.2.1.2.1.4 Nuclear Training Section

The Nuclear Training Section, under the supervision of a Superintendent, reports to the Superintendent, Nuclear Services. The Section is responsible for: the training programs for licensed operators (qualification and requalification), and senior licensed operators, non-licensed operations personnel and general employee training. The Section supervises, conducts and maintains records of the necessary training and is responsible for the preparation of and updating the training program.

The Section maintains records documenting: which personnel have completed training or retraining; test scores showing results of this training; a course outline showing the details of training; and a record of attendance at the training.

17.2.1.2.1.5 Emergency Preparedness Section

The Emergency Preparedness Section, under the supervision of a Director, who reports to the Superintendent, Nuclear Services, is responsible for the development and update of the Emergency Plan that describes the resources and actions for dealing with nuclear plant incidents. Additionally, the Director - Emergency Preparedness interfaces with other outside emergency response organizations to ensure proper coordination in the execution of emergency response actions.

17.2.1.2.1.6 Fuel Management Section

The Fuel Management Section, under the supervision of an Engineer-In-Charge, reports to the Superintendent, Nuclear Services. The responsibilities of this Section include: core monitoring and analytical support; fuel isotopic analysis and reports; fuel performance evaluation; economic evaluations for operations and fuel utilization stategy; administration of fuel research and development test programs; refueling specifications; reload fuel safety and licensing; and related core components (fuel channels, control rod blades, LPRM) performance monitoring and replacement specifications.

17.2.1.1.1.7 Station Organization (Exhibit III)

The PBAPS station organization, duties and responsibilities are described in Section 13.2.1.

17.2.1.2.2 Fossil - Hydro Generation Division

The Fossil - Hydro Generation Division is under the direction of a Superintendent, who reports to the Manager, Fossil-Hydro Production. The Fossil - Hydro Generation Division is comprised of Fossil - Hydro Generating Stations, Steam Heat, and Fossil Services. Fossil Services is under the direction of a Superintendent, who reports to the Superintendent of the Fossil - Hydro Generation Division. It is

composed of four Sections: Performance, Training, Methods, and Fuels.

17.2.1.2.2.1 Training Section

The Training Section, under the supervision of a Superintendent, who reports to the Superintendent, Fossil Services, is responsible for preparing and conducting various training programs for fossil/hydro operations and supports the Nuclear Training Section, as required. In addition, the Training Section administers the PECo operating employee qualifying examination program for the Generation Divisions.

17.2.1.2.2.2 Methods Section

The Methods Section, under the supervision of a Superintendent, who reports to the Superintendent, Fossil Services, is responsible for the preparation and distribution of rules and procedures that implement the Departmental policies that provide industrial safety protection to personnel and equipment in Electric Production facilities.

These rules and procedures are directed at the protection of personnel, in, on, or around machines or equipment during repair, maintenance, operation, and associated activities, from injury, due to unexpected energization or start-up of the equipment. These rules are implemented by affixing appropriate lock-out/tag-out devices to the machines or equipment energy isolation devices.

The Methods Section is responsible for the preparation, control, and distribution of the book entitled 'Rules for Permits and Blocking'.

17.2.1.2.3 Quality Assurance Division - (Exhibit IV)

The Quality Assurance Division is responsible for for administering the overall Quality Assurance Program of the Electric Production Department .

The Division is headed by a Superintendent, who reports directly to the Manager, Nuclear Production. The Division is composed of four sections: Engineering, Audit, Quality Control, and Training.

17.2.1.2.3.1 Superintendent - Quality Assurance

Qualifications for this position are established by the Vice President, Electric Production Department, based on recommendations of the Manager, Nuclear Production. At the time of appointment, the Superintendent, QA shall have a bachelors degree or the equivalent in an engineering or science subject and shall have a minimum of 10 years of responsible administrative or operating experience in the Electric Production Department of which a minimum of 8 years shall be in the field of power plant operation, maintenance, or engineering, and/or quality assurance. A maximum of 4 years of the remaining 7 years of experience may be fulfilled by satisfactory completion of academic or related technical training on a one-for-one time basis. The education and experience requirements specified should not be treated as absolute, as management retains the right to evaluate alternate experience and administrative training to qualify for this position. The Superintendent, QA Division, has the following responsibilities and authorities.

1. Formulate, develop, and establish Quality Assurance policy in the areas of Operations, Maintenance, Modifications, In-Service Inspection, Surveillance Testing, Fuel Handling, Health Physics and Chemistry, Radiological and Environmental Monitoring, Fire Protection, Physical Security, Emergency Plans, Radioactive Waste and Material, Training, Procurement, Audits, Records, Non-Conformances and Corrective Action.

2. Administration and coordination of the Operations Quality Assurance Program (OQA Program).

3. Furnish overall direction for implementing the OQA Program.

4. Review and approve Administrative Procedures which implement the OQA Plan.

5. Approve all Quality Assurance Division Procedures and Audit Instructions for the implementation of the OQA Plan.

6. Require verification of corrective action and problem resolution for items affecting quality.

7. Initiate and recommend corrective action or provide solutions through designated channels.

8. Direct cessation of work when such work is considered by the Superintendent, Quality Assurance, to be a serious quality degradation.

9. Determine the on-going status and adequacy of the OQA plan through regular review of QA Division Audits, identification and investigation of problem areas, determination of timely and effective steps taken to correct deficiencies, and the evaluation of general plant QA performance through such other inputs as are available or are deemed necessary to make a reasonably objective and confident judgement.

10. Apprise the Vice President and the Manager, Nuclear Production of the Electric Production Department periodically of the status of the Quality Assurance aspects of the Peach Bottom Units 2 and 3 operations, and immediately of significant problems affecting quality.

11. Control contents and revisions of the OQA Plan.

12. Assure that personnel involved in the implementing of the QA Division procedures are trained and/or qualified.

13. Contract for QA/QC consulting services as necessary.

14. To assess, through QA Audits and Surveillances, the adequacy and effectiveness of procurement documents, modification and maintenance procedures.

15. To approve Audit and Surveillance Reports and Noncompliance Reports (NCR) and responses thereto.

16. Delegation of portions of the Quality Assurance Program during the Operational Phase of PBAPS to the Engineering & Research Department (e.g. major modifications, Evaluated Suppliers List, vendor evaluations, etc.).

17. Provide support for QA training and qualification programs, as required, for implementation and execution of the QAP.

17.2.1.2.3.2 Engineering Section

The Engineering Section is under the direction of the Engineer-QA, who reports to the Superintendent, QA. The Engineer - QA has the following responsibilities:

1. Prepare and maintain PECo OQA plans and procedures.

2. Implement and document PECo EP quality assurance plans, programs and procedures, as applicable.

3. Keep the Superintendent, Quality Assurance, informed of status of quality assurance effort and of significant problem areas.

4. Provide technical direction of the activities of the Quality Assurance Division Engineering Staff.

5. Maintain a liaison with PBAPS Staff in order to be apprised of the needs of quality assurance activities during plant operations and maintenance.

6. Assure, in conjunction with the General Supervisor-QA, that deficient areas identified in audits or surveillances, which require corrective action, are included in re-audits or surveillances.

7. Review audit and surveillance reports, prior to issue.

8. Control the preparation and distribution of the OQA Plan and revisions thereto.

9. Review the OQA Plan and Quality Assurance Division Procedures and Instructions Manual to determine if revisions are required.

10. Maintain a controlled filing system of records pertaining to the Quality Assurance Division's implementation of the OQA Plan.

11. Maintain current codes, standards and regulations pertaining to the Quality Assurance Program.

12. Keep the Superintendent, Quality Assurance, advised on the status of regulations, codes and standards which may effect the content of the OQA Plan

13. Review procurement documents initiated by Electric Production Department organizations for safety-related equipment and services to assure that adequate quality requirements are included.

17.2.1.2.8.2.1 QA Engineering Staff

The QA Engineering Staff under the direction of the Engineer-QA shall provide the technical and administrative support requirements of the QA Division, as assigned.

17.2.1.2.3.3 Audit Section

The Audit Section is under the direction of the General Supervisor - QA, who reports to the Superintendent, QA. The General Supervisor - QA has the following responsibilities:

1. The administrative supervision of the Quality Assurance Division Audit Section.

2. Direct the performance of audits and surveillances in accordance with written procedures to assure compliance with the OQA plan.

3. Oversee the preparation of Quality Assurance audit check lists.

4. Consult with the Superintendent, Quality Assurance, and Engineer-QA on significant problems affecting quality.

5. Review results of audits and surveillances.

6. Review with Engineer-QA, deficient areas identified by audit or surveillance.

7. Assure that items requiring corrective action, identified in audits or surveillances, are included in rescheduled audits or surveillances.

8. Scheduling audits and surveillances to assure compliance with the OQA plan.

9. Recommend to the Superintendent, Quality Assurance Division, the issuance of noncompliance reports (NCR) as a result of reviews of QA Division audits and surveillances.

17.2.1.2.3.3.1 Site and Corporate Audit Supervisors

Under the administration of the General Supervisor-QA, the site and corporate audit supervisors have the following responsibilities: Supervise and perform the preparation, conduct, and reporting of audits and surveillances of Peach Bottom Plant activities as required by regulations, Company policies, and QA Division procedures.

17.2.1.2.3.3.2 Auditor - QA

Under the direction of the Site and Corporate Audit Supervisor, the Auditor-QA has the responsibility to:

1. Provide a continuing program of audits and surveillances in accordance with the QA Division Procedures and Instructions Manual to assure compliance with the OQA plan.

2. Provide continuing awareness of plant conditions and status of daily on-site QA activities in order to inform the General Supervisor-QA of plant activities affecting quality.

3. Prepare audit and surveillance check lists and reports.

4. Identify problems adverse to quality through audits and surveillances and notify management of the audited organization in accordance with applicable procedures.

5. Recommend corrective action through designated channels.

6. Verify implementation of corrective action of problems adverse to quality.

7. Verify compliance with quality-related procedures and instructions.

8. Keep the General Supervisor-QA advised of status of the OQA program through audits and surveillances.

9. Conduct independent Audits of Hydro and Fossil Plant operations and maintenance activities affecting quality and reliability as required by departmental or divisional management.

17.2.1.2.3.4 Quality Control Section

The Quality Control Section is under the direction of the General Supervisor - QC, who reports to the Superintendent, Quality Assurance. The General Supervisor - QC has the following responsibilities:

1. Providing administrative supervision and technical direction for the activities of the Quality Assurance Division QC Inspection personnel.

2. Overseeing the inspection activities and monitoring program in the area of receipt inspection, radwaste packaging and handling, Maintenance Division activities performed on safety related equipment, Health Physics and plant operations.

3. Consulting with the Superintendent, Quality Assurance Division; Engineer - QA; and General Supervisor - QA when significant problems affecting quality are identified.

4. Overview of the monitoring and inspection activities, schedules, and results.

5. Overall planning for the preparation of QCIs, review of appropriate Maintenance procedures, and Health Physics procedures for QC Witness and Inspection Hold Points.

6. Assuring that the personnel involved in the implementation of the QC Inspection Activities are trained and qualified.

7. Assuring that items requiring corrective action identified in monitoring or inspection activities are included in rescheduled audits or surveillances.

8. Recommending to the Superintendent, Quality Assurance Division, the issuance of Noncompliance Reports (NCRs) as a result of the Monitoring and Inspection Programs.

17.2.1.2.3.4.1 Site QC Supervisor

Under the administration of the General Supervisor - QC, the Site QC Supervisor has the following responsibilities: supervise and perform the preparation, conduct and reporting of QC Inspections and Monitoring of Plant Activities as required by regulations, Company policies, and QA Division Procedures.

17.2.1.2.3.4.2 Under the direction of the Site QC Supervisor, the QC Staff (QC Engineers and Inspectors), is responsible for:

1. Receipt inspection for safety-related items and services procured by the Electric Production Department.

2. QC inspection and monitoring of radwaste handling, packaging, and shipping.

3. QC inspection of safety related equipment maintenance.

4. QC inspection and monitoring of refueling operations.

5. QC inspection of minor modifications performed by the Electric Production Department.

6. As appropriate, QC inspection and monitoring of lifting and handling of heavy loads and safety-related components.

7. Monitoring of day-to-day activities of plant operations.

17.2.1.2.3.5 Training Section

The Training Section is under the direction of the Training Coordinator who reports to the Superintendent, Quality Assurance Division. The Training Coordinator has the following responsibilities:

1. Developing and maintaining a Quality Assurance indoctrination and training program for the various employee position levels within the Electric Production Department.

2. Developing and maintaining a Quality Assurance training program for qualifying, certifying, and requalifying QA Division personnel including: QA Engineers, QA Auditors, QC Engineers, QC Inspectors, and QC Technicians.

3. Develop QA/QC training programs for functional areas of responsibility.

4. Evaluating training requirements for QA/QC personnel and preparing training program outlines, courses, and modules.

5. Evaluating proposed courses, seminars, and training alternatives against training programs to assure that training offered will meet the training objectives.

6. Develop, document, and maintain QA training records for Electric Production Department personnel as necessary to meet QA program commitments.

17.2.1.2.4 Services Division

The Services Division is under the supervision of a Superintendent, who reports to the Manager - Fossil-Hydro Production. The Division is composed of the Chemistry Section, Costs Section, and Computer Applications Section, and has responsibility for administrative and technical engineering support.

17.2.1.2.4.1 Chemistry Section

The Chemistry Section is under the direction of the Chief Chemist, who reports to the Superintendent, Services Division. The Chemistry Section is responsible for assisting the plant staff in the performance of routine and special tests of a chemical nature.

17.2.1.2.4.2 Costs Section

The Costs Section under the direction of the Engineer-in-Charge, who reports to the Superintendent, Services Division, is responsible for the function of Electric Production Department budgeting, cost analysis, and interconnection accounting. Economic analysis of overall Electric Production system operation is also a function of this Section.

17.2.1.2.4.3 Computer Applications Section

The Computer Applications Section is under the supervision of an Engineer-in-Charge, who reports to the Superintendent, Services Division. The Section is responsible for maintenance and improvement of

existing computer installations within the Electric Production Department and software design for new installations.

17.2.1.2.5 Maintenance Division

The Maintenance Division, under the supervision of a Superintendent, who reports to the Manager, Fossil-Hydro Production, is responsible for performing maintenance activities at all generating stations and steam heating plants. The Division is composed of five sections: Station, Mechanical, Electrical, Engineering, and Administrative.

17.2.1.2.5.1 Station Section

The Station Section, under the direction of a Superintendent, consists of qualified craftsmen and supervision to carry out maintenance functions at the generating stations. The Peach Bottom Station Group is under the direction of a Supervising Engineer and a Supervisor who direct performance of Maintenance Division activities at the station.

17.2.1.2.5.2 Electrical Section

The Electrical Section, under the direction of a Superintendent, is responsible for the inspection and maintenance of electrical equipment and components.

17.2.1.2.5.3 Mechanical Section

The Mechanical Section, under the direction of a Superintendent, consists of qualified craftsmen and supervision who support maintenance functions at PBAPS. The Mechanical Section is divided into two groups: Mobile Groups and the Technical Group.

17.2.1.2.5.3.1 Technical Group

The In-Service Inspection Group is under the supervision of an Engineer - Supervisory, who reports to the Senior Engineer, Technical Group. The group is responsible for directing, controlling, and coordinating NDE activities performed in accordance with the ASME B&PV Code, Section XI.

17.2.1.2.5.4 Engineering Section

The Engineering Section, under the supervision of a Senior Engieeer, who reports to the Superintendent, Maintenance Division, is located at Maintenance Division Headquarters. This Section is administratively independent from plant operations and station maintenance and is responsible for the technical support of quality-related maintenance activities. One or more members of the Section shall be designated to provide technical assistance and engineering support to PBAPS Maintenance personnel.

17.2.1.2.5.5 Administrative Section

The Administrative Section, under the direction of the Supervisor consists of the Training and Testing Group, Clerical Group, and Safety Group. The Training and Testing Group provides for the training of helpers and craftsmen and qualification of craftsmen in the various crafts. The Clerical Group supports the maintenance function. The Safety Group is responsible for the administration of the safety program and the maintenance of safe working conditions for all Maintenance Division employees.

17.2.1.2.6 Plant Operation Review Committee (POR Committee)

The POR Committee is an advisory group organized on the plant level to review general plant operations. The Chairman of the Committee is the Plant Superintendent or his designated alternate. The members of the committee are: Assistant Superintendent, Engineer-Technical, Engineer-Maintenance, Applied Health Physicist, Senior Chemist, Engineer-Instruments and Controls, Engineer-Results, Engineer-Reactor, Engineer-Operations, and Shift Superintendent.

The POR Committee is knowledgeable in Quality Assurance policies, procedures and requirements. The POR Committee reviews proposed tests, inspections, procedures, changes to safety-related equipment, structures and components, proposed changes to the plant Technical Specifications or operating license, and both normal and abnormal plant performance. Changes of a safety-related nature are referred to the Nuclear Review Board. This assures the quality of the plant programs.

The POR Committee shall review plant operations to detect potential safety hazards. The POR Committee shall take immediate steps to correct any actions which are found to compromise the quality of the activity. The status of any actions taken by the POR Committee shall be incorporated in the Committee meeting minutes, copies of the minutes shall be sent to Departmental Management, the NRB and the

Superintendent, QA. Other duties and responsibilities are defined by the Technical Specifications.

17.2.1.2.7 Nuclear Review Board (NRB)

The NRB is advisory to the Vice President, Electric Production. The Committee reviews proposed changes to, or violations of the Technical Specifications, changes or modifications to plant systems which might effect plant safety, and licensee events which are reportable under 10CFR20 or 10CFR50. The NRB also conducts periodic audits of plant operations and reviews Plant Operation Review Committee actions.

The members of the NRB are technically qualified employees of Philadelphia Electric Company appointed by the Vice President, Electric Production, and are not members of the station staff. The Committee also has as a member an independent qualified consultant. The duties and responsibilities of NRB are defined by the Technical Specifications and the NRB Charter.

17.2.1.3 Engineering & Research Department - (Exhibit VII)

The Engineering & Research Department is responsible for plant design, procurement, construction and pre-operational testing during initial construction of PBAPS and also during major modifications to PBAPS as described in the FSAR. The Department employs nearly 1,000 technical personnel to accomplish this task. In addition to this normal staff, the Department engages consultants and contractors to supplement and extend its capabilities in fields of specialized technology.

The Department is directed by the Office of the Vice President-Engineering & Research, who has the responsibility for the activities of the six Divisions which comprise the Department; namely, the Mechanical Engineering, Electrical Engineering, System Planning, Construction, Engineering Design,

Research and Testing Divisions, and the Quality Assurance Section.

The Engineering & Research Department furnishes engineering services to the Electric Production Department in the areas of vendor Quality Assurance evaluation and surveillance, maintenance of the ESL, and major modification design and construction work as requested by the Electric Production Department. Also, technical matters relating to station design, operation and modifications may be referred to the Engineering & Research Department where they are analyzed by specialists in various disciplines.

The Engineering & Research Department may delegate work to consultants in a manner similar to that employed during the Design and Construction, and Pre-op Phases of the plant.

The activities of the Engineering and Research Department are coordinated by the Mechanical Project Engineer and the Electrical Project Engineer. The Project Engineers are responsible for:

1. Assigning responsibilities related to Modfications to the appropriate Divisions, Sections, Branches, and Groups.

2. Acting as the primary interface between PECo and major contractors (such as the original NSSS and A/E) when such contractors are employed.

3. Coordinating plans and schedules.

4. Certain administrative aspects, such as document distribution and coordination and maintenance of the project file.

The Mechanical Project Engineer is responsible for coordinating, maintaining and distributing requests for and revisions to the Project Summary Q-List.

17.2.1.3.1 Mechanical Engineering Division

The Mechanical Engineering Division, under the Chief Mechanical Engineer, has prime responsibility for the design, construction and pre-operational testing of company facilities, and accomplishes its purpose through project coordination and design review of mechanical plant equipment and components. Five Sections (Nuclear and Environmental, Civil, Power Plant Design, Power Plant Services, and Industrial) comprise the Division.

17.2.1.3.1.1 Nuclear and Environmental Section

The Nuclear and Environmental Section is under the supervision of the Engineer-in-Charge who reports to the Chief Mechanical Engineer. The Section is composed of two Branches, the Nuclear Branch and the Environmental Branch.

The Nuclear and Environmental Section is responsible for:

1. The interface between the Electric Production Department and the Engineering and Research Department for activities related to nuclear fuel and special nuclear material

2. Establishment and implementation of the PECo Nuclear Fuel Fabrication Quality Assurance Program including:

   (a) Review and evaluation of the fuel fabricator's nuclear material accountability and QA program against applicable NRC regulations

   (b) Conduct of audits of the fuel fabricator's QA and nuclear material accountability program, including audits of fabrication, design control, and packaging activities

   (c) Review of QA/QC documentation and records of non-conforming materials related to fabrication of nuclear fuel for PECo

(d) Review of QA/QC documentation and data generated by the fabricator during fabrication of PECo fuel

(e) Special testing and inspection of fuel components as determined to be appropriate

(f) Recommending receipt inspection criteria to the station superintendent or his designated representative

8. Determination of fuel cycle requirements including uranium ore, conversion enrichment, fabrication, and spent fuel shipping and disposal. Evaluation of bids to supply fuel cycle services

4. Administration of fuel cycle service contracts

5. Calculation of fuel cycle costs and burn-up charges

6. Nuclear material accountability prior to receipt of fuel assemblies by PECo

7. Reload licensing services

8. Establishing a steady-state computer model of the reactor core

9. Coordination and review of licensing documents

17.2.1.3.1.2 Civil Section

The Civil Section, under the direction of the Engineer-in-Charge, who reports to the Chief Mechanical Engineer is composed of two Branches: the Structural Branch and the Hydraulics Branch. Reviews of applicable plant design are made by the two Branches.

17.2.1.3.1.3 Power Plant Design Section

The Power Plant Design Section is under the supervision of the Engineer-in-Charge, who reports to the Chief Mechanical Engineer. The Section is

responsible for reviewing the design of major mechanical power generation equipment and systems.

17.2.1.3.1.4 Power Plant Services Section

The Power Plant Services Section, under the direction of the Engineer-in-Charge, who reports to the Chief Mechanical Engineer, is composed of three Branches: The Station Services Branch, the Energy Services Branch, and the Nuclear Services Branch.

The Power Plant Services Section is responsible for reviewing the design of auxiliary mechanical equipment and systems.

17.2.1.3.1.5 Industrial Section

The Industrial Section, under the direction of the Engineer-in-Charge, who reports to the Chief Mechanical Engineer, is composed of three Branches: the Architectual Branch, the Building Facilities Branch, and the Clerical Branch. The Section is responsible for reviewing the design of ventilation, heating, air conditioning, and fire protection systems.

17.2.1.3.2 Electrical Engineering Division

The Electrical Engineering Division, under the Chief Electrical Engineer, has responsibility for electrical design of the company facilities and accomplishes its purpose through the design review of plant electrical equipment and components. Five Sections (Station Engineering, Electrical Equipment, Field Engineering, Computer and Controls, and Transmission and Distribution Engineering) comprise the Division.

17.2.1.3.2.1 Station Engineering Section

The Station Engineering Section, under the direction of the Engineer-in-Charge, who reports to the Chief Electrical Engineer, is composed of four Branches:

the Nuclear Generation Branch, the Fossil/Hydro Generation Branch, the Substation Branch, and the Customers Engineering Branch.

17.2.1.3.2.2 Electrical Equipment Section

The Electrical Equipment Section, under the direction of the Engineer-in-Charge who reports to the Chief Electrical Engineer, is composed of four Branches: The Overhead Equipment Branch, the Underground Equipment Branch, the Station Equipment Branch, and the Structural Equipment Branch.

17.2.1.3.2.3 Field Engineering Section

The Field Engineering Section, under the direction of the Engineer-in-Charge who reports to the Chief Electrical Engineer, is composed of three Branches: the Fossil Hydro Branch, the Substation Branch, and the Nuclear Branch.

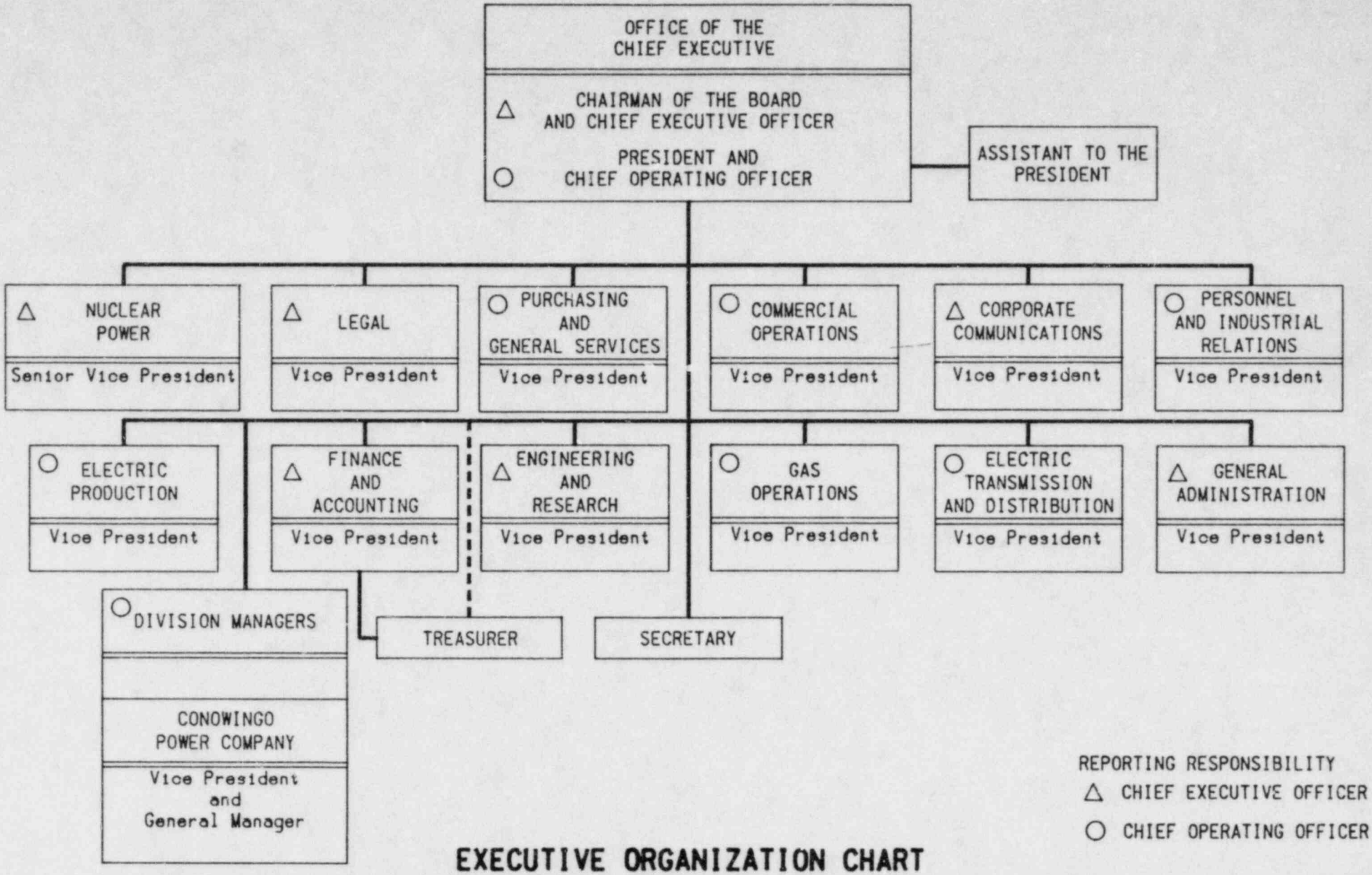
The Field Engineering Section is responsible for the following:

1. Reviewing the design documents for the Modification and determining the testing to be performed by the Field Engineering Section to demonstrate that the Modification will perform adequately in service. The Field Engineering Section may also determine electrical equipment testing to be performed by the Research and Testing Division.

2. Providing instructions/procedures for the performance of testing by Field Engineers

3. Evaluating and accepting or rejecting test results, unless another organization is specified

4. Maintaining a log of reports of nonconformances intitiated by them

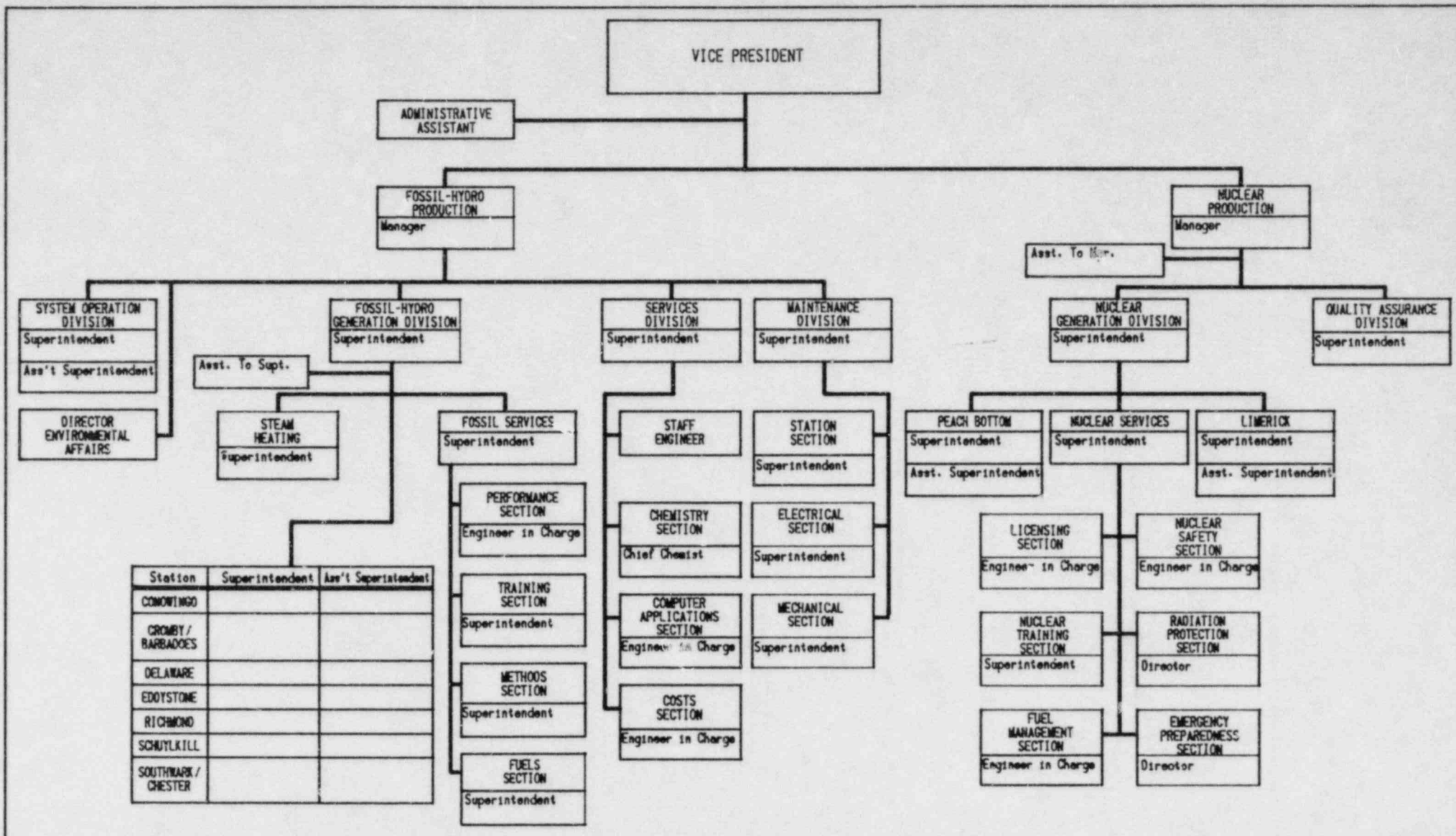


EXECUTIVE ORGANIZATION CHART

PHILADELPHIA ELECTRIC COMPANY

EXHIBIT I

REV. 2 01/84



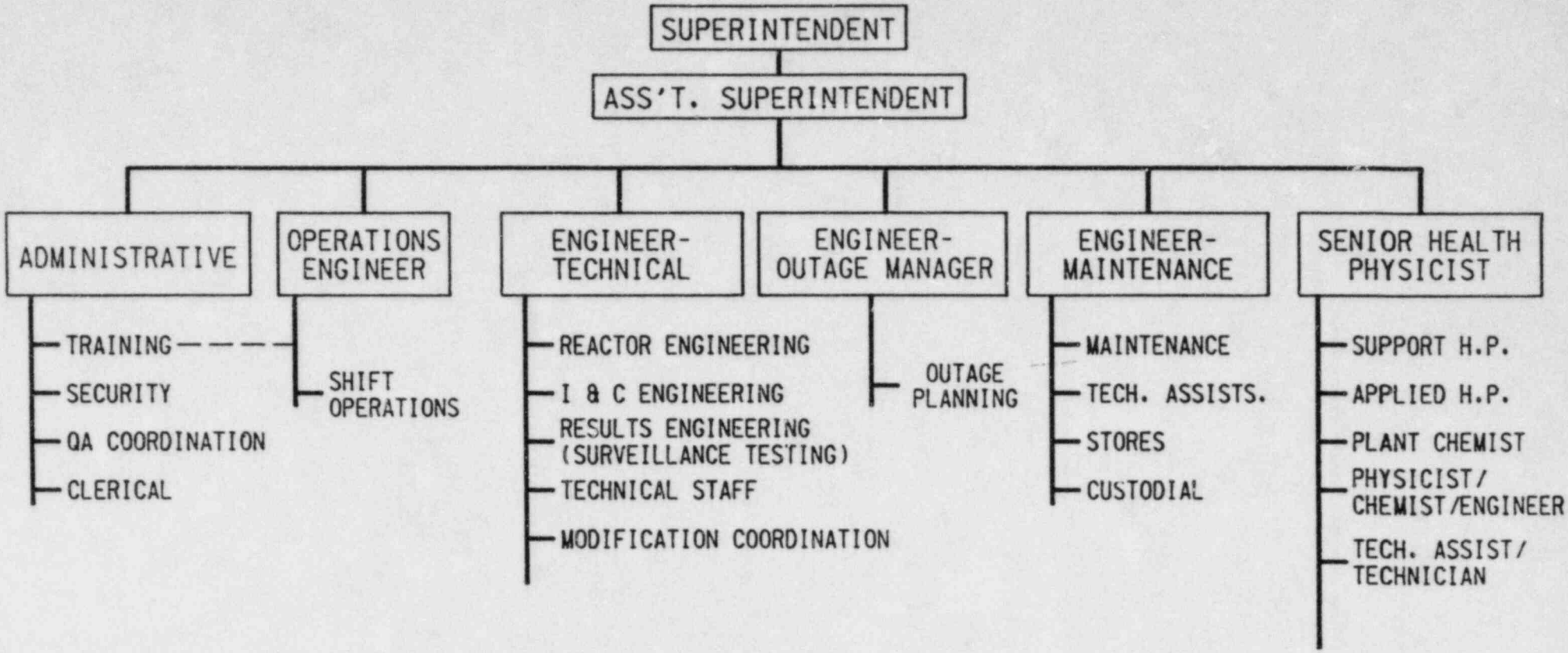
ORGANIZATION CHART

ELECTRIC PRODUCTION DEPARTMENT

PHILADELPHIA ELECTRIC COMPANY SYSTEM

EXHIBIT II

REV. 2 01/84



FUNCTIONAL ORGANIZATION CHART

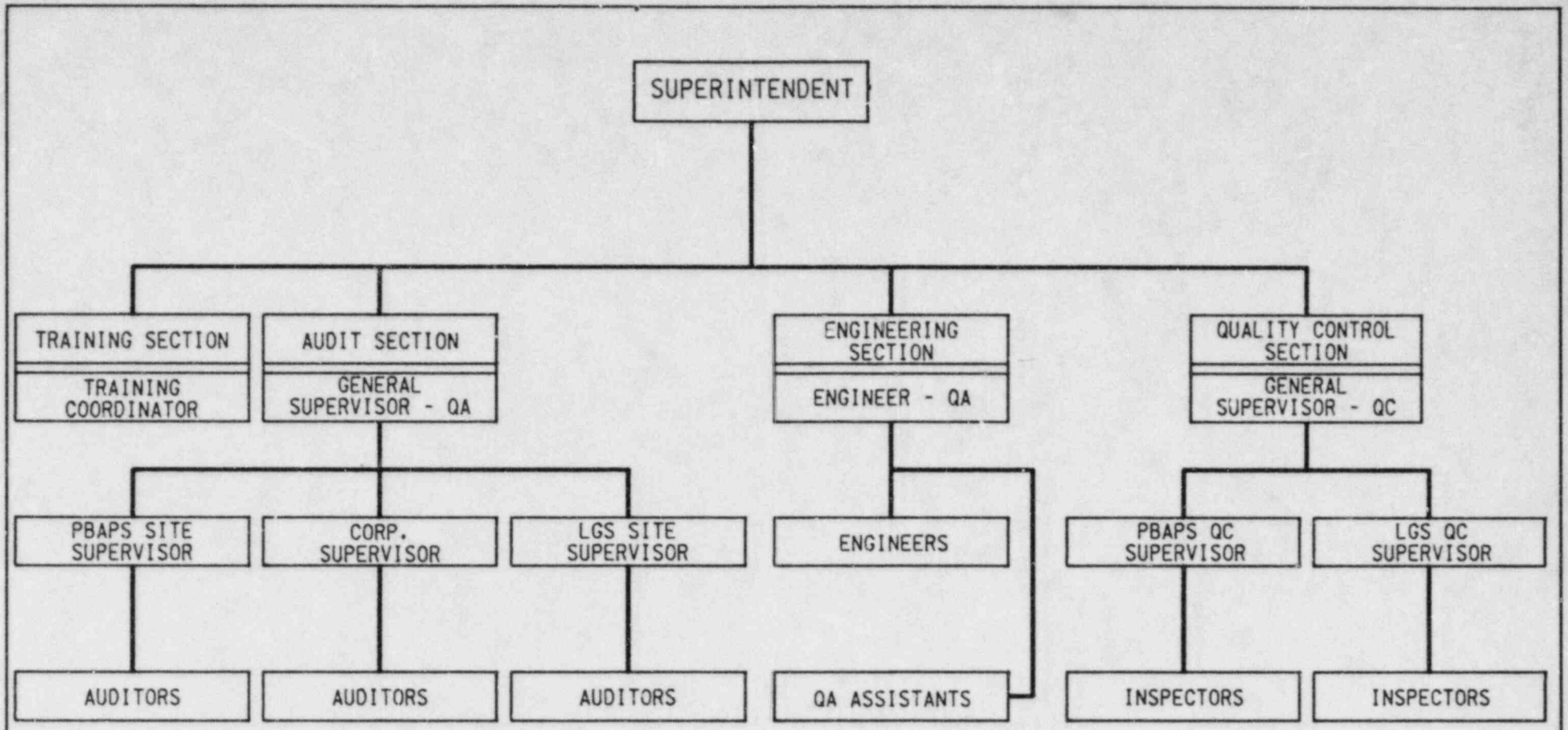
PEACH BOTTOM ATOMIC POWER STATION

ELECTRIC PRODUCTION DEPARTMENT

PHILADELPHIA ELECTRIC COMPANY

EXHIBIT III

Rev. 2, 01/84



ORGANIZATION CHART

QUALITY ASSURANCE DIVISION

ELECTRIC PRODUCTION DEPARTMENT

PHILADELPHIA ELECTRIC COMPANY

REV. 2 01/84

EXHIBIT IV

2301 Market Street

March 15, 1983

FROM: J. H. Austin, Jr.

TO: J. S. Kemper
Vice President
Engineering & Research

S. L. Daltroff
Vice President
Electric Production

SUBJECT: Quality Assurance Policy

The purpose of this memorandum is to reemphasize the importance of the quality assurance activity which has been in effect since the beginning of the nuclear program of the Philadelphia Electric Company and to formalize the responsibility for administering the QA program within the Company's organization. Because of the close association between safety and quality assurance, it is essential that in all matters relating to our nuclear installations, quality assurance must continue to take precedence.

The responsibility delegated by this office for instituting and maintaining the QA program rests with the Vice President of Engineering & Research during the planning, design and construction phases of project and with the Vice President of Electric Production when the project reaches the operational stage. The organization in each of the departments will continue to be administered in a manner that will provide for the reporting of all matters pertaining to quality directly to the management of the departments and to the management of the Company.

In order to assure that the effectiveness of the QA program be maintained, I am directing the Vice Presidents of Engineering & Research and Electric Production to establish close liaison so that all necessary steps be taken to assure that our QA program continues to be carried out effectively at all times. Any questions that cannot be resolved between the responsible Vice Presidents or any situation where there is an unresolved question regarding the quality of any equipment or system should be immediately brought to my attention.

It is essential that the Company maintain the highest degree of excellence in the area of quality assurance so that safe and reliable operation will be assured throughout the life of all nuclear facilities.

President

Exhibit V

REV. 1
01/83

2301 Market Street

May 10, 1984

FROM: S. L. Daltroff

TO: M. J. Cooney
A. J. Weigand
G. R. Conover, Jr.
W. T. Ullrich
M. J. McCormick, Jr.
E. J. Onley
R. H. Goucher
W. C. Whitfield
R. H. Moore
W. B. Willsey

SUBJECT: Peach Bottom QA Plan - Operations Phase

It is the desire of the Management of the Electric Production Department that Peach Bottom Atomic Power Station be operated with the primary consideration being the health and safety of the public and the employees. To that end, a QA activity has been formally established since 1973 by the subject plan and you are directed to follow the requirements therein.

A prime requirement of the QA Plan is that quality deficiencies be identified and that work not proceed until a satisfactory resolution of such problems is obtained. QA is the first priority and work on Safety-Related Systems is to stop forthwith unless established procedures are being complied with.

The QA Division has been given the authority to require the stopping of work in the event that Quality Control measures are not satisfied.

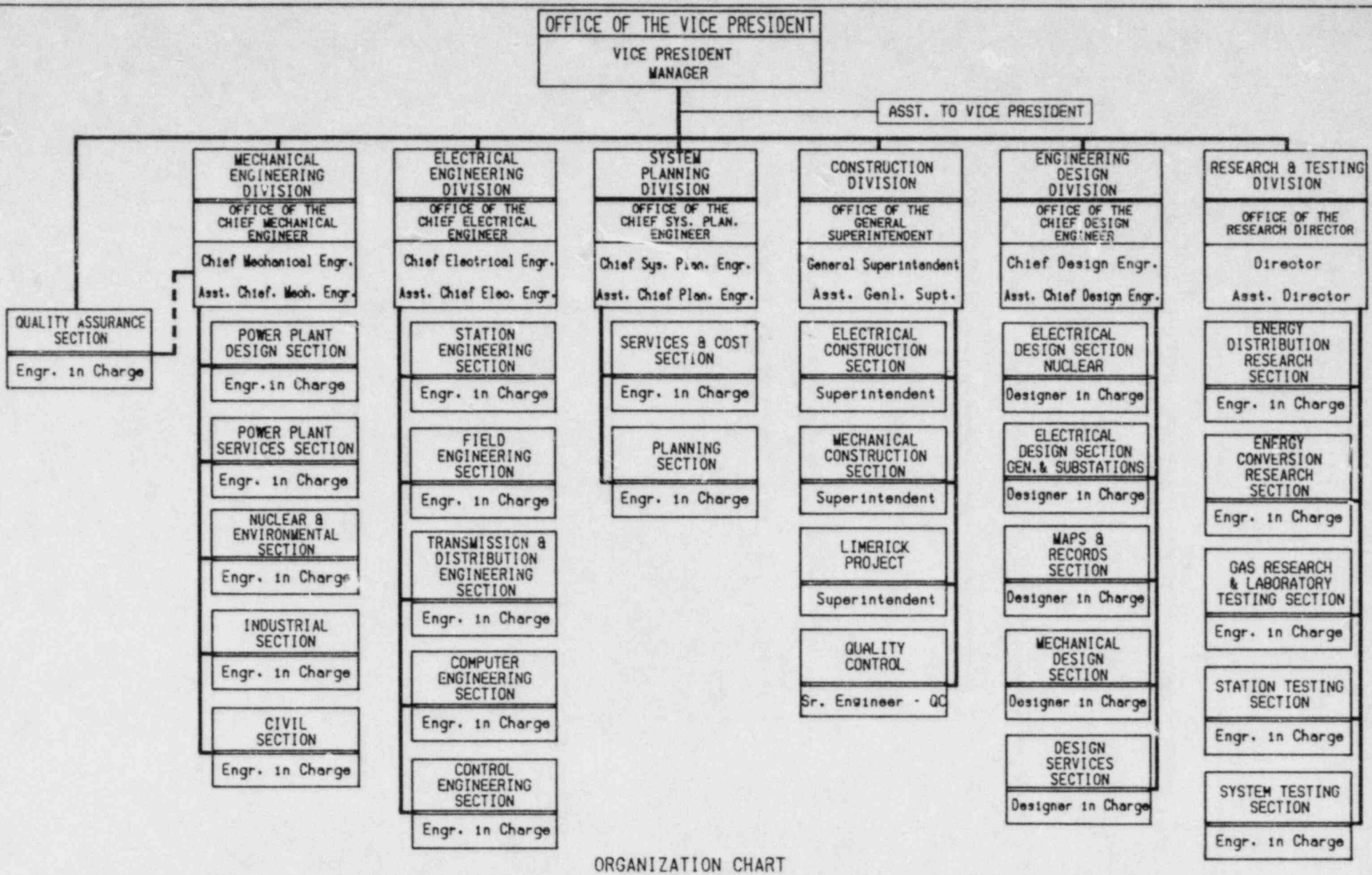
No work is to be undertaken on Safety-Related Systems unless adequate procedures are available and unless an Administrative Procedure is available for control.

It is my intent that the QA Division be involved in site activities in such a manner as they deem necessary to carry out their assignments, and I expect Electric Production Department personnel to cooperate to the fullest extent.

This policy statement is a permanent directive of the Electric Production Department and is made a part of the QA Plan.

Vice President
Electric Production

EXHIBIT VI



ORGANIZATION CHART

ENGINEERING AND RESEARCH DEPARTMENT

PHILADELPHIA ELECTRIC COMPANY

REV. 2 01/84

——— RESPONSIBILITY

- - - - ADMINISTRATIVE SUPPORT

EXHIBIT VII

PRAPS QAP VOL. III - ADMINISTRATIVE PROCEDURES

Proc. No.	Proc. Title	CRITERION (10CFR50, App. B)																
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
A-1	Preparation and Approval of Administrative Procedures	x	x			x	x											x	*
A-2	Control and Use of Documents	x	x				x											x	*
A-3	Temporary Changes to Approved Procedures	x	x			x	x				x							x	*
A-4	Plant Operations Review Committee Procedure	x	x	x		x											x	x	*
A-6	Control of Drawings and Drawing Logs	x	x				x											x	*
A-7	Shift Operations	x	x					x										x	*
A-8	Procedure for Control of Locked Valves	x	x						x						x			x	*
A-9	Plant Communications Systems		x																*
A-10	Equipment Location Code List		x						x										*
A-11	Alarm Cards	x	x			x	x											x	*
A-12	Ignition Source Control Procedure	x	x			x	x		x	x	x						x	x	*
A-12.1	Controlling Tech. Spec. Firewatch and Fire-watch Patrols	x	x								x				x			x	*
A-12.2	Control of Combustibles	x	x						x					x			x	x	*
A-12.3	Reporting Fire System Impairments	x	x												x	x	x	x	*
A-13	Reporting Defects and Noncompliances	x	x													x		x	*
A-14	Plant Modification	x	x	x	x	x	x					x					x	x	*
A-14.1	Process Computer Modification Procedure	x	x	x		x	x	x				x						x	*
A-15	Generation of Health Physics Operating and Chemical Operating Procedures	x	x			x	x						x						*
A-16	Generation of Health Physics Analytical Procedures	x	x			x	x						x					x	*
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

Exhibit VIII

PBAPS QAP VOL. III - ADMINISTRATIVE PROCEDURES

Proc. No.	Proc. Title	CRITERION (10CFR50, App. B)																
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
A-17	Generation of Chemical Analytical Procedures	x	x			x	x											x	*
A-18	Generation of Fuel-Handling Procedures	x	x			x	x											x	*
A-19	Preparation & Distribution of Maintenance Procedures	x	x			x			x	x	x	x			x	x	x	x	*
A-20	Generation of System Procedures	x	x			x	x											x	*
A-21	Generation of Emergency Plan Procedures	x	x			x	x												*
A-22	Generation of Operational Transient, Off-Normal, & Special Event Procedures	x	x			x	x												*
A-23	Generation of Special Procedures	x	x			x	x											x	*
A-24	Generation of Radiochemical Analytical Procedures	x	x			x	x											x	*
A-25	Preventive Maintenance Program	x	x			x	x				x	x							*
A-26	Procedure for Corrective Maintenance	x	x			x	x		x	x	x	x			x	x	x	x	*
A-26A	Procedure for Corrective and Preventive Maintenance Using CHAMPS	x	x				x		x	x	x	x			x	x	x	x	*
A-27	Procedure for Material Control System	x	x	x	x	x	x	x	x	x	x			x		x	x	x	*
A-27.4	Transfer of Equipment or Material to PBAPS from LGS	x	x						x					x				x	*
A-27.5	Procedure for Procurement and Control of Catalog Items	x	x		x			x	x		x			x	x	x	x	x	*
A-28	Cleaning of Fluid Systems Components	x	x			x					x							x	*
A-29	Review and Implementation of Amendments to the Tech. Specs.	x	x				x											x	*

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

Exhibit VIII

PBAPS QAP VOL. III - ADMINISTRATIVE PROCEDURES

Proc. No.	Proc. Title	CRITERION (10CFR50, App. B)																
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
A-30	Plant Housekeeping Controls	x	x								x							x	*
A-31	Notification of the NRC	x	x															x	*
A-32-A	Review, Approval and Implementation of Temporary or Permanent Setpoint or Range Changes	x	x			x	x											x	*
A-33	Control of By-Product Material	x	x			x	x												*
A-34	Generation of Prefire Strategy Plan "F" Procedures	x	x			x												x	*
A-36	Periodic Review of Procedures	x	x			x	x												*
A-40	Working Hours Restrictions	x	x			x	x											x	*
A-41	Control of Safety-Related Equipment	x	x			x	x				x	x			x			x	*
A-42	Jumper Log Procedure	x	x			x	x				x				x			x	*
A-43	Surveillance Testing System	x	x			x	x					x	x					x	
A-44	Special Nuclear Material Accounting and Safeguards Directives	x	x			x	x	x	x		x			x	x	x	x	x	*
A-45	Generation, Review and Approval of Reactor Engineering Procedures	x	x			x	x											x	*
A-46	Records Retention Requirements		x															x	*
A-46.1	Transmittal of Records to the NRMS		x															x	*
A-47	Generation of Surveillance Tests	x	x			x													*
A-50	Training Procedure	x	x			x	x											x	*
A-55	General Requirements for QA Procurement and Receipt Inspectors	x	x								x							x	*
A-56	General Requirements for Radwaste QC Inspectors	x	x								x							x	*
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

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		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
A-70	Fuel Warranty Data Acquisition Procedure	x	x			x												x	*
A-80	In-Service Inspection	x	x			x	x		x	x	x	x	x			x	x	x	*
A-81	Generation of Visual In-Service Inspection Surveillance Tests	x	x			x	x				x	x						x	*
A-82	In-Service Inspection Surveillance Testing System (ST-ISI)	x	x								x	x				x	x	x	*
A-83	ALARA Program Administrative Procedure	x	x			x	x		x			x	x						x *
A-84	Control of High Radiation Area Keys	x	x			x			x										x *
A-86	Corrective Action	x	x													x	x	x	*
A-87	Control of Heavy Loads	x	x								x	x		x	x			x	*
A-88	Storage of Radioactive Material at Unit 1 New Fuel Vault	x	x								x	x						x	*
A-94	Preparation and Control of TRIP Procedures	x	x			x	x											x	*
MA-1	Generation, Control and Revision of Maintenance Division Administrative Procedures	x	x			x	x											x	*
MA-3	Documentation and Control of Maintenance at Oregon Shop	x	x			x					x	x						x	*
MA-4	Welder Qualification and Welding Procedure Qualification	x	x			x	x			x	x	x						x	*
MA-6	Calibration and Control of Maintenance Division Measuring and Test Equipment	x	x										x	x				x	*
MA-7	Handling of Q-Listed Items	x	x			x		x			x			x				x	*
MA-8	Control of Purchased Material and Services	x	x		x			x	x		x			x		x	x	x	*
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

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		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
MA-9	Training and Testing of Maintenance Division Personnel	x	x															x	*
MA-10	Control of Weld Filler Metals	x	x					x	x	x				x				x	*
MA-11	Preparation of Maintenance Shop Procedures	x	x			x	x											x	*
MA-12	General Requirements for Quality Control Inspectors	x	x								x							x	*
MA-15	Use of Contractors on Quality Control Work	x	x					x			x							x	*
MA-16	General Requirements for Training and Certification of Nondestructive Testing Personnel	x	x							x	x	x						x	*
MA-17	Generation, Control and Revision of Maintenance Division Standard Work Instruction Procedures	x	x			x	x											x	*
MA-18	Quality Assurance/Quality Control Training of Maintenance Personnel	x	x															x	*
MA-20	Certification of Inspectors of Handling Equipment and Rigging	x	x															x	*
MA-21	Processing and Completion of a Peach Bottom Maintenance Request Form	x	x				x											x	*
MA-23	Controlling Work Hours	x	x															x	*
SDA-1	Generation, Control, and Review of Stores Division Procedures	x	x			x	x											x	*
SDA-2	Supervising Storekeeper's Monthly Inspection and Training	x	x								x							x	*
SDA-3	General Superintendent's Annual Review	x	x															x	*
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

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		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
SDA-4	Procurement of Nuclear Safety-Related Parts, Material, and Services, Oregon Maintenance Shops Storeroom No. 331	x	x	x				x	x		x			x		x		x	*
SDA-5	Storage, Packaging, and Shipping of Items for Nuclear Power Plants	x	x					x	x					x		x		x	*
SDA-6	Procurement of Nuclear Safety-Related Parts, Material, and Services at Storeroom #387, Peach Bottom Atomic Power Station	x	x	x				x	x		x			x		x		x	*
SDA-7	Procurement, Storage, and Control of Shelf-Life Items	x	x	x				x	x					x		x		x	
SDA-8	Procurement of "Catalog Items" at PBAPS, Storeroom #387	x	x	x				x	x		x			x		x		x	*
RT-05-50001	Preparation, Revision to, and Control of Procedures	x	x			x	x											x	*
RT-02-50002	Qualification and Training of Research and Testing Division Personnel	x	x															x	*
RT-10-50003	Qualification of Quality Control Inspectors and Performance of Quality Control Inspections	x	x								x							x	*
RT-12-50007	Control of Calibration of Primary, Secondary, and Tertiary Standard Instruments	x	x				x		x				x			x	x	x	*
RT-12-50008	Control of Calibration of Portable Test Equipment	x	x				x		x				x			x	x	x	*
RT-09-50010	Training and Certification of Nondestructive Testing Personnel	x	x							x								x	*

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Proc. No.	Proc. Title	CRITERION (10CFR50, App. B)																
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
RT-03-50013	Calculation of Nuclear Safety-Related Instrument Setpoints	x	x			x							x					x	*
PA-1	Generation, Control, and Revision of Purchasing Division Administration Procedures for Quality-Assured Purchases	x	x			x	x											x	*
PA-2	Quality-Assured Training of Purchasing Division Personnel	x	x															x	*
NS-1	Preparation, Review, and Changes to Nuclear Section Procedures	x	x			x	x											x	*
NS-2	Preparation of Purchase Orders for Nuclear Safety-Related Services	x	x		x	x	x											x	*
CSA-1	Generation, Revision, and Control of Claims Security Division Procedures	x	x			x	x											x	*
CSA-2	Control of PECo Physical Security Plans, Safeguards Contingency Plan, and Security Personnel Training and Qualifications Plans	x	x			x	x											x	*
CSA-3	Background Investigations for Personnel Requiring Unescorted Access at Nuclear Generating Stations		x								x							x	*
CL-A-1	Generation, Control, and Revision of Chemistry Section Procedures	x	x			x	x											x	*
CL-A-2 to CL-A-5	Various Procedures for Test, Analysis and Control of Chemistry Section Functions	x	x			x		x			x	x	x	x	x	x	x	x	*
CL-A-6	Records Retention	x	x				x											x	*
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18

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Proc. No.	Proc. Title	CRITERION (10CFR50, App. B)																
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
SAF-A-1	Generation, Control, and Revision of Safety Department Administrative Procedures	x	x			x	x											x	*
SAF-A-2	Generation, Control, and Revision of Safety Department Fire Protection Equipment Testing and Inspection Procedures	x	x			x	x											x	*
SAF-A-3	Training and Qualification of Safety Department Personnel	x	x															x	*
SAF-A-5	Control of Measuring and Test Equipment	x	x								x	x	x			x			*
SSDA-1	Control of Nuclear Records Management System (NRMS) Procedures	x	x			x	x											x	*
AD-A-1	Generation, Control, and Revision of Training Section and Methods Section Procedures	x	x			x	x											x	*

* - QA Division Procedures and Instructions Manual

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Exhibit VIII

17.2.1.8.2.4 Computer and Controls Section

The Computer and Controls Section, under the direction of the Engineer-in-Charge, who reports to the Chief Electrical Engineer, is composed of three Branches; the Computer Applications Branch, the Plant Control Systems Branch, and the Protective Relay Branch. The Branches are responsible for: engineering review, design and consulting functions as they apply to process computers; for engineering review, design and consulting functions as they apply to instrumentation and control equipment; and for engineering review, design and consulting functions as they apply to protective relays.

17.2.1.8.3 Construction Division

The Construction Division is headed by the General Superintendent, who reports to the Office of the Vice President - Engineering and Research, and the Assistant General Superintendent to whom the Electrical Construction Section Superintendent, Mechanical Construction Section Superintendent, and Construction Division Senior Engineer-QC report.

17.2.1.8.3.1 The Electrical and Mechanical Construction Sections' Superintendents are responsible for construction activities performed by their personnel and contractors at PBAPS. The Field Force Branches of the Electrical and Mechanical Construction Sections, headed by the Supervisor - Field Construction, consist of supervisors, foremen, subforeman, and skilled craftsmen of various trades who are responsible for the installation of Modifications implemented by the Construction Division. The Construction Engineers Branches, headed by the Supervising Engineers, consist of group leaders, construction Engineers, and field assistants who are responsible for planning and scheduling Modifications, and for following work performed by the Field Forces or contractors.

17.2.1.8.3.2 The Construction Division Senior Engineer-QC is responsible for establishing and implementing the Construction Division QC inspections. The Sr. Engineer-QC has no responsibility for scheduling and cost. The qualification requirements for Sr. Engineer-QC include a background in construction

practices and procedures and a working knowledge of applicable codes and specifications. The responsibilities of the Sr. Engineer-QC include: preparing, revising and controlling distribution of Construction Division procedures; providing QC indoctrination and training, and overseeing the QC inspection activities of the Construction Division Quality Control Group and providing a liaison between Construction Division and the QA Section. The Construction Division Quality Control Group is responsible for inspecting work performed by the Field Force Branches and for performing receipt inspection of procured safety-related material.

17.2.1.3.4 Research and Testing Division

The Research and Testing Division is under the supervision of the Director of the Research and Testing Division, who reports to the Office of the Vice President - Engineering and Research. The Division is composed of five Sections: the Energy Distribution Research Section, Energy Conversion Research Section, Gas Research and Laboratory Tests Section, System Tests Section, and Station Tests Section; and a Quality Control Group. The Energy Distribution Research and System Tests Sections are not involved with Quality Assurance activities at PBAPS.

17.2.1.3.4.1 Energy Conversion Research Section

The Energy Conversion Research Section is under the supervision of the Engineer-in-Charge who reports to the Director of the Research and Testing Division. The Section supplies consulting services in the areas of metallurgy, nondestructive testing, and welding.

17.2.1.3.4.2 Station Tests Section

The Station Tests Section, is under the supervision of the Engineer-In-Charge, who reports to the Director of the Research and Testing Division, is responsible for conducting tests as assigned to them by Construction Division or by Engineering Work

Letter, and for the provision of instructions and procedures needed to accomplish assigned tests.

17.2.1.8.4.3 Gas Research and Laboratory Tests Section

The Gas Research and Laboratory Tests Section, is under the supervision of the Engineer-In-Charge, who reports to the Director of the Research and Testing Division, is responsible for the calibration of measuring and test equipment; for conducting tests in the areas of metallurgical and non-destructive testing; and for testing and evaluating mechanical components, electrical components, and materials as requested by other Divisions of the Engineering and Research Department and other Departments within Philadelphia Electric Company.

17.2.1.8.4.4 Quality Control Group

The Research and Testing Division QC Group is comprised of appropriate technical disciplines and has no responsibility for scheduling and cost. This group is responsible for inspecting work performed by the field forces and for performing their nonconformance reporting and corrective action responsibilities in accordance with established procedures. The QC Inspectors have the authority to stop unsatisfactory work and to control further processing or installation of nonconforming material. This stop work authority shall be delineated in applicable procedures. Personnel will be assigned to the QC Group on a continual basis and will be qualified in accordance with Regulatory Guide 1.58, as delineated in Appendix 17.2B.

17.2.1.8.5 Quality Assurance Section

The Quality Assurance Section is under the supervision of the Engineer-in-Charge, Quality Assurance Section, who reports directly to the Office of the Vice President - Engineering and Research. Administrative support is provided by the Chief Mechanical Engineer.

The Quality Assurance Section has been delegated the following responsibilities during the operational phase of Peach Bottom Units 2 and 3.

1. Establish and maintain the list of Evaluated Suppliers (ESL).

2. Audit/surveillance of vendor activities as appropriate, to support the Evaluated Suppliers List.

3. Establish, administer and coordinate the Quality Assurance Program associated with major modifications, capital equipment installation or renewal, in accordance with PBAPS Quality Assurance Plan, Vol. I, Design and Construction Phase.

4. Review and approval of E&R Department initiated procurement documents for inclusion of appropriate quality requirements.

17.2.1.3.6 Engineering Design Division

The Engineering Design Division is under the supervision of the Chief Design Engineer who reports to the Office of the Vice President, Engineering and Research Department, and is responsible for the following work on Peach Bottom Units 2 and 3:

1. Receiving and distributing drawings and drawing change notices and vendor drawings which have been issued for construction.

2. Providing or approving drawing quality requirements.

3. Reviewing incoming drawings for quality and taking corrective action when drawing quality is unacceptable. Informing the Project Manager of corrective action taken.

4. Assigning PECo numbers to drawings.

5. Obtaining permanent record drawings on Mylar and/or microfilm.

6. Establishing and maintaining a permanent drawing storage and retrieval system.

7. Performing detailed design work based upon criteria provided by the Mechanical and Electrical Engineering Divisions

8. Preparation and review of Modification and as-built drawings

9. Initiating procurement request letters and procurement request specifications as required by Engineering and Research Department

17.2.1.4 Purchasing and General Services

Purchasing and General Services is under the direction of the Vice President, Purchasing and General Services who reports to the President and Chief Operating Officer of the Company. Purchasing and General Services is composed of five departments: Insurance, Fuel Procurement, Service Operations, Purchasing, and Real Estate.

17.2.1.4.1 Purchasing Department

The Purchasing Department, under the supervision of a Manager, is responsible for purchasing all equipment, material, spare parts, and services as requisitioned by the PBAPS Staff, Stores Division or other requisitioning organizations.

17.2.1.4.2 Service Operations Department

The Stores Division, under the supervision of a General Superintendent, who reports to the Manager, Service Operations Department, is responsible to requisition, receive, document receipt, store, issue, and to inventory supplies, spare parts and other procured materials.

17.2.1.5 Legal Department

The Legal Department is directed by the Vice President and General Counsel with the aid of the Associate General Counsel. They have responsibility for the activities of the two Divisions which comprise the Department; namely the Legal Division and the Claims - Security Division.

17.2.1.5.1 Claims - Security Division

The Claims - Security Division is under the supervision of the Manager, Claims - Security Division, who reports to the Associate General Counsel - Legal Department. The Director of Security, who reports to the Manager, Claims-Security Division, is responsible for overall security on a company-wide basis.

17.2.1.6 Personnel and Industrial Relations

The Safety Division is under the direction of a Director who reports to the Manager, Personnel and Industrial Relations. The Safety Division Fire Protection Section is under the supervision of the Company Fire Marshal who reports to the Director of Safety. The Fire Protection Section, in conjunction with Electric Production site personnel, perform or arrange certain fire equipment testing and inspections both routine and as required by Technical Specifications. In addition, the Safety Division Fire Protection Section is responsible for the procurement, testing, replacement and record keeping of fire hoses, extinguishers, fire brigade self-contained breathing aparatus and other fire equipment as required. The Company Fire Marshal is responsible for the review of fire protection system designs, as requested.

The Safety Division is responsible for at least a once per year review of housekeeping practices that affect safety. The Safety Division assigns a Safety Representative to each nuclear power plant so as to provide a constant review of all industrial safety practices that affect personnel safety.

17.2.1.7 Finance and Accounting Department

The Nuclear Records Section, within the Finance and Accounting Department, is under the direction of a Supervisor who reports to the Manager, Systems Support Division. The Document Administration Centers (Philadelphia, Limerick, and Peach Bottom) are under the direction of Supervisors, who report to the Supervisor/Project Leader, Nuclear Records Section.

The Supervisor, DAC, is responsible for task delegation to ensure creation of PECo's record copy of Nuclear Related documents which have been submitted to DAC. In addition, he is responsible for assuring that a daily check of environmental conditions in the records storage area is perf· med and for conducting the quarterly inspection of records stored in the Records Vault.

DAC personnel are responsible for: stamping sequence numbers on records; indexing records into the NRMS, microfilming of records and disposition of records.

17.2.2 Program

PECo has the responsibility for assuring that the operation of Peach Bottom Atomic Power Station is conducted in a safe manner. The Company's long standing policy and practice required that the plant be conservatively designed and constructed utilizing applicable codes, specifications, and regulations, including those related to QA. This practice should minimize the probability of component failure and greatly enhance reliability and operational safety. Furthermore, in the case of the nuclear power plant, certain systems, structures, and components which are described in this Final Safety Analysis Report have been incorporated into the plant to prevent or mitigate the consequences of accidents which could cause undue risk to employees and the public health and safety. This combination of the conservative design practices, the utilization of nationally accepted codes and standards, and the incorporation of special safeguard systems coupled with a quality construction program is the foundation on which the operational safety program rests.

The post-commissioning operation and maintenance of the power plant is done in a high quality manner utilizing Philadelphia Electric's operating experience, guidance and recommendations from USNRC Regulatory Guide 1.33, Nov. 1972; ANSI N18.7 - 1972 and ANSI N45.2 - 1971. Additional guidance has been obtained through informal discussions with NRC compliance representatives and other nuclear power plant operators. Philadelphia Electric Company is convinced that, when activities associated with the operation, maintenance, repairing, fueling, and modifying are properly prepared, executed and verified, operational safety is assured.

The quality assurance program for operations is presented herein and describes the managerial and administrative controls to be used to assure safe nuclear power plant operations. This, together with the Engineering & Research Department's Design and Construction Phase QA plan, described in the PBAPS Quality Assurance Plan, Volume I, meet the requirements of 10CFR50, Appendix B, through all phases of plant design, construction, operation and maintenance. The coordination of QA activities between the Engineering & Research Department and the Electric Production Department is accomplished at the Department Vice Presidential level, working through the Department Heads. Portions of the Quality Assurance Program during the Operational Phase of PBAPS may be delegated to the Engineering & Research Department (e.g., major modifications, evaluated suppliers list, etc.). Questions concerning implementation, conduct of program or program adequacy from the company standpoint will be resolved at this level. The President of the Company is kept informed of the QA program, plans and performance, and directs the overall Company policy with regard to QA, resolving questions brought to him by the respective Department Vice Presidents. This general plan of QA Administration is in accordance with the directives issued by the President of the company, dated March 15, 1983 (Exhibit V) and the Vice President, Electric Production Dept., dated May 10, 1984 (Exhibit VI).

17.2.2.1 The Quality Assurance Program for the Operational Phase of Peach Bottom Atomic Power Station is described in the PBAPS Quality Assurance Plan, Vol.

III. The QA plan implements Philadelphia Electric Company's policies and objectives by addressing the managerial and administrative controls in various operational activities such as; Training, Health Physics & Chemistry, Fuel Handling, Shift Operations, Surveillance Testing, Maintenance, In-Service Inspection, Procurement, Physical Security, Emergency Plans, Fire Protection, Radiological and Environmental Monitoring, and Modification.

17.2.2.1.1 Each of the activities address the eighteen criteria of 10CFR50 Appendix B and describe how each activity is in compliance with Appendix B. For each of the activities, major QA program procedures are written to implement and document all aspects of the QA Plan. A matrix of the Administrative Procedures versus the 18 criteria of 10CFR50 is presented in Exhibit VIII to demonstrate that Appendix B provisions are fully implemented by documented procedures.

17.2.2.1.2 Appendices A & B to Section 17.2 of the FSAR describe the structure of the quality assurance program with respect to the guidance and recommendations included in WASH documents 1283 (Rev. 1), 1284, 1309 and/or Regulatory Guides and ANSI Standards not included in Wash documents.

17.2.2.2 The program shall be reviewed, to determine the status and adequacy, by the Superintendent, QA, Station Superintendent, on a continuing basis and the NRB annually in order to determine any changes or modifications necessary to maintain the standards of safety required by 10CFR50, Appendix B.

17.2.2.2.1 The Office of the Vice President of the Electric Production Department is informed on a continuing basis of the status and effectiveness of the quality assurance program through Vice-Presidential Staff Meetings and receipt of Quality Assurance Audit Reports, Surveillance Reports and Non-compliance Reports.

17.2.2.3 The QA Plan applies to activities conducted on systems, components, and structures installed to prevent or mitigate the consequences of an accident which could be harmful to the public. These are designated safety-related equipment and are listed in the latest revision of the PBAPS Project Summary Q-List. Although the measures discussed apply primarily to Q-listed equipment, they may also be applied in varying degrees to non-Q List equipment, such as radiological and environmental monitoring, fire protection, physical security, emergency plans and radioactive waste and material. The application of these quality assurance measures to non-Q systems will additionally enhance operational safety.

17.2.2.4 The Superintendent, Quality Assurance, has the responsibility for maintaining, controlling and distributing the PBAPS OQA Plan to responsible personnel or organizations who perform quality-related functions.

17.2.2.4.1 The PBAPS OQA Plan is approved by the Superintendent, QA; Manager, Nuclear Production; and the Vice President, Electric Production Department.

17.2.2.5 The Quality Assurance Division is staffed with trained and qualified personnel, both on and off site, who are independent of the Nuclear Generation and Maintenance Divisions. The QA Division has the primary responsibility through QA planned and periodic audits and surveillances and QC Inspections and Monitoring of work-in-progress to verify through objective evidence that this Quality Assurance Program is being accomplished in accordance with PBAPS OQA Plan.

17.2.2.5.1 The Training Coordinator-QA, is responsible for developing and maintaining a quality assurance/quality control indoctrination and training program to establish proficiency in quality assurance/quality control and to qualify QA Division personnel in accordance with Division requirements and procedures.

17.2.2.6 The QA Division may involve itself in the planning of quality-related activities to assure that adequate quality assurance/quality control requirements are provided consistent with their importance to safety.

17.2.2.7 Resolutions resulting from differences of opinion regarding deficiencies or noncompliances identified from audits, surveillances, inspections or monitoring, by QA Division shall be made by the Manager, Nuclear Production.

17.2.2.8 The QA Division has been given the authority to require the stopping of work in the event that such work could result in a degradation of quality.

17.2.2.9 The quality assurance program is documented by written policies, procedures and instructions and shall be carried out throughout the life of the plant.

17.2.2.9.1 The Superintendent, QA Division, reviews and approves all Administrative Procedures that implement the OQA Plan.

17.2.2.9.2 The administrative and implementing procedures and instructions pertaining to quality-related activities are written to accomplish those activities with appropriate equipment under suitable environmental conditions.

17.2.2.10 Operating personnel selection and training complies with PBAPS Technical Specs., which is in accordance with ANSI N18.1 - 1971.

17.2.2.10.1 The training program assures competent material selection and instruction. The retraining program is designed to maintain current operator competence and

uses current NRC recertification proposals as a guide. Training aids and materials are utilized. Formal classroom and individual study periods are scheduled. Evaluation of trainee's progress is documented.

17.2.2.10.2 The training program also includes provisions for non-licensed personnel and general employee indoctrination. General employee training includes: quality-related plans and procedures appropriate to the specific job related activities; radiological health and safety (ALARA Program), industrial safety and first aid; plant controlled access areas and security; and the use of protective clothing and equipment. Personnel performing quality-related activities are trained and qualified in the principles and techniques of the activities being performed. These areas include technical training, on-shift training, qualification or certification requirements, and qualifying tests as appropriate for the job position. Administrative procedures delineate the scope, objectives and methods associated with the training program along with requirements for retraining and documentation of the training accomplished.

17.2.2.11 Quality Control inspections of instrument maintenance are performed by the Research and Testing Division Quality Control Group as required to verify compliance with instrument maintenance procedures.

17.2.2.12 The Quality Assurance requirements of 10CFR50 Appendix B as applicable during the manufacturing phase are invoked on vendors, suppliers or contractors through procurement document requirements.

17.2.3 Design Control

17.2.3.1 Design and design control measures are established for plant modifications and are controlled and administered by PBAPS Administrative Procedures. Plant modifications are categorized into major and minor classifications.

17.2.3.2 Major modifications are defined by the PBAPS Administrative Procedures and are referred to and accomplished by the E&R Department in accordance with PBAPS QAP Vol. I, and E&R Department design and design review measures.

17.2.3.2.1 The Engineering and Research Department has developed a series of procedures which are used to control the design of major modifications. These procedures specify requirements and controls for design reviews, including approvals and issuance thereof, for design interfaces, for documents, for coordination among participating design organizations, for preparing safety evaluations to meet 10CFR50.59, and for insuring inclusion of applicable design requirements such as design bases, regulatory requirements, codes, and standards. The procedures provide for the original design and design verification to be either assigned to an outside consultant or performed within PECo. For work performed by PECo, specific procedures have been developed to control design and design verification.

17.2.3.2.2 The Engineering and Research Department follows Regulatory Guides and ANSI Standards, specifically ANSI N45.2.11, as indicated in Appendix 17.2B.

17.2.3.3 Instructions for design of minor modifications are written to require compliance to regulatory requirements as defined in 10CFR50.2, 10CFR50.59, and as defined in the license application in accordance with the design bases of the structures, systems, or components.

17.2.3.3.1 Measures are established and documented to assure that the applicable design requirements, such as design bases, regulatory requirements, codes and standards are correctly translated into specifications, drawings, procedures, or instructions. These measures include provisions to assure that appropriate quality standards are specified and included in design documents.

17.2.3.3.2 Quality standards at least as conservative as those applied to the original equipment shall be specified and deviations from such standards shall be controlled. Commercially standard (off-the-shelf) materials, parts or equipment which have been previously approved for different applications are reviewed for suitability in the design process.

17.2.3.3.3 Minor modifications are normally of a scale which do not require design interfaces and coordination among different design organizations.

17.2.3.3.4 Design adequacy is verified by independent design review in accordance with PBAPS Administrative Procedures. These reviews are performed by cognizant engineers in the Station Engineering Section, in the appropriate Division of the E&R Department or in some cases by the Engineering Section in the Maintenance Division of the Electric Production Department. The reviews consist of reviewing the design, spot checking the calculations or analysis, and assessing the results against the original design bases and functional requirements.

17.2.3.3.5 Design control measures are applied to items such as the following: reactor physics, stress, thermal, hydraulic, and accident analyses; compatibility of materials; accessibility for in-service inspection, maintenance, and repair; and include a delineation of acceptance criteria for inspections and tests and other design work on Q-listed items or systems.

17.2.3.3.6 Cases may arise when the modification is designed to specifications somewhat different than the original design (as when equipment meeting the original specifications is no longer available). In these cases, deviations from the original specifications shall be specifically noted along with the technical basis for the deviation and evaluation that the new design continues to meet the original design bases.

17.2.3.3.7 Minor modifications may be accomplished by PECo Operating and Maintenance personnel in accordance with the measures established for the maintenance activities and procurement. Inspection of modification work is included in the controls established for these activities.

17.2.3.3.8 Measures are established to assure that the modifications meet design, installation, inspection, testing and quality assurance standards. Testing of modifications assures system integrity and provides for evaluation of performance prior to operation.

17.2.3.4 Approval of minor modifications is delineated in PBAPS Administrative Procedures pertaining to Plant Modifications.

17.2.3.5 Design documents for minor modifications such as proposals, records, procedures and approvals are administered, maintained, and controlled through the use of a Plant Modification Control Sheet in accordance with Administrative Procedures.

17.2.4 Procurement Document Control

17.2.4.1 Measures are established in accordance with PBAPS Administrative Procedures to control the preparation, approval and issuance of procurement documents.

17.2.4.1.1 Material and Services required for the Operations Phase of PBAPS are procured in accordance with Administrative Procedures, Budget and Control Division, Purchasing Division, and Stores Division Procedures.

17.2.4.2 Plant Administrative Procedures require that a cognizant engineer determine the technical and quality assurance requirements for a Quality Assured item. He determines the applicable specification, drawings, details, and code requirements to be applied to the purchase order. He also determines special controls to be applied such as vendor controls, hold points, tests to be performed, along with acceptance or rejection criteria, sub-vendor controls, vendor check points, test data, test results, special labeling, storage instructions, requirements for reporting nonconformances, shipping instructions, receipt controls, and QA documentation requirements.

17.2.4.3 The final requisition is prepared by the Stores Division, based on requests furnished by the ordering group. A cognizant Plant Staff member reviews all "Quality Assured" requisitions with approval by the Station Superintendent or his alternate in accordance with plant Administrative Procedures.

17.2.4.4 The procedures outlined above are followed with the addition of a QA Division review of the requisitions to assure that replacement parts have equivalent quality requirements invoked on the purchase order as required by the OQA Plan.

17.2.4.4.1 Spare or replacement parts shall be of a quality level equal to or better than that of the original equipment.

17.2.4.4.2 If the QA Division procurement document review determines that a deficiency or an unsatisfactory item associated with quality requirements exists in

any part of the procurement document, then comments shall be transmitted to the responsible requisitioning personnel for appropriate corrective action. The revised requisition shall then be reviewed by QA Division to verify that the comments have been resolved to the satisfaction of QA Division.

17.2.4.5 Material, equipment, and services shall be purchased from vendors or contractors having an acceptable quality assurance program which is consistent with regulations as set forth in applicable regulatory requirements, and 10CFR50, Appendix B.

17.2.4.6 The Engineering & Research Department Quality Assurance Section is responsible for establishing, maintaining, revising, and issuing an "Evaluated Suppliers List" for Nuclear Power Plants in accordance with PBAPS QAP Volume I, Appendix L.

17.2.4.7 The Engineering & Research Department purchase orders for major modifications shall be controlled and distributed in accordance with Volume I of the PBAPS Quality Assurance Plan.

17.2.4.8 The Stores Division and Purchasing Department process only approved requisitions in accordance with PECo Procurement procedures and policies.

17.2.4.8.1 The Purchasing Department shall not alter the information on a requisition of any Quality Assured item without prior approval of the requisitioning organization.

17.2.4.9 The procurement document for quality assured items includes a provision for the right-of-access to vendor facilities for inspection or audit purposes.

17.2.4.10 Procurement documents are maintained in accordance with Section 17.2.17 of this Plan.

17.2.5 Instructions, Procedures, and Drawings

17.2.5.1 Activities associated with the implementation of this Quality Assurance Program are prescribed and accomplished in accordance with appropriate instructions, procedures, and drawings. Administrative Procedures are written by the plant staff, reviewed by the POR Committee and approved by the Superintendents of the Station and QA Division, and distributed to predetermined personnel. These Administrative Procedures contain provisions which clearly delineate the sequence of actions for the preparation, review, approval, and control of activity implementing procedures, instructions and drawings. Exhibit VIII delineates the manner in which the criteria of 10CFR50, Appendix B, are implemented.

17.2.5.2 Activity implementing procedures, instructions and drawings, where appropriate, include quantitative and qualitative acceptance criteria, sign offs, hold points and witness points to assure that important activities are satisfactorily accomplished. The POR Committee, who is knowledgeable in quality assurance requirements and administrative controls, reviews implementing procedures, such as tests, special processes, maintenance, and modification procedures, to assure adequacy and effectiveness.

17.2.5.2.1 Appropriate recording documents such as log books, work request forms, check-off lists, or data sheets, shall be used to assure compliance with the instructions, procedures and drawings.

17.2.5.2.2 Procedures shall also include, where applicable, reference to vendor equipment manuals, design drawings and specifications, prerequisites, special precautions and the delineation of the work to be accomplished.

17.2.5.2.3 Equipment manuals and manufacturers' instructions shall be readily available for use.

17.2.5.3 Maintenance Administrative Procedures for the control of work performed at the Central Maintenance Shop shall be prepared, approved by the Superintendent, Maintenance Division, and Superintendent, QA, and distributed to predetermined personnel, to assure quality of the work.

17.2.5.4 Systems Support Division, Budget and Control Division, Purchasing Department and Stores Division procedures which are applicable to the stores and purchasing activity are reviewed by the QA Division.

17.2.5.5 Quality Assurance Division personnel shall, in the course of audits and surveillances, review the adequacy, completeness, and effectiveness of implementing procedures, instructions, and drawings associated with activities performed under this QA Plan.

17.2.5.6 Engineering and Research Department instructions, procedures, and drawings are controlled in accordance with Volume I of the PBAPS Quality Assurance Plan.

17.2.6 Document Control

17.2.6.1 Measures are established through the requirements of the OQA Plan to control the issuance of instructions, procedures, and drawings, including changes thereto. These documents are reviewed and approved in accordance with Administrative Procedures. They are procedurally controlled through the use of master registers or indices which are updated with the issuance of revised procedures, instructions and drawings. Administrative Procedures and revisions thereto are reviewed and approved by the Supt. QA Division. Distribution is to predetermined responsible personnel to preclude the use of superceded documents.

17.2.6.1.1 Changes to any of these documents shall be reviewed for adequacy and released by the same authorized personnel who performed the original review or by a designated replacement.

17.2.6.1.2 Temporary and emergency procedure change mechanism is provided in the Administrative Procedure controls.

17.2.6.2 PBAPS OQA Plan and Quality Assurance Division procedures and revisions thereto are controlled as per QA Division Procedures and Instructions Manual under the authority of the Superintendent, QA Division.

17.2.6.3 PBAPS activity instructions, procedures, and drawings, delineated in the document control requirements of the OQA Plan are procedurally controlled and approved in accordance with the PBAPS Administrative Procedures under the authority of the Station Superintendent or his alternate. These controls establish individual responsibilities for the preparation, review, approvals, and distribution that apply to the various quality-related activities which include: Training, Shift Operations, Fuel Handling, Radwaste, Health Physics & Chemistry,

Surveillance Testing, Fire Protection, Environmental Monitoring, Emergency, Physical Security, In-Service Inspection, Maintenance, Modifications, and Stores and Purchasing.

17.2.6.8.1 The control of documents apply to those records delineated in section 17.2.17 of this submittal.

17.2.6.4 Revisions to other quality-related documents, such as PBAPS Technical Specifications and FSAR are controlled by the use of distribution lists and indices to predetermined personnel to preclude the use of superceded documents.

17.2.6.5 Engineering and Research Department document control is in accordance with Volume I of the PBAPS QA Plan.

17.2.7 Control of Purchased Material, Equipment, and Services

17.2.7.1 Measures are established for controlling purchased material, equipment, and services to assure that the material, equipment or services conform to the procurement document specifications and quality assurance requirements established in Section 17.2.4.

17.2.7.1.1 Material, equipment, and services are purchased from vendors, suppliers or contractors having an acceptable quality assurance program which is consistent with applicable regulatory requirements. The E&R Department Quality Assurance Section shall maintain an up to date listing of such vendors, suppliers or contractors in accordance with the requirements PBAPS QAP Vol. I, App. L.

Procurement of items or services from other than "Evaluated Suppliers" shall be controlled and shall have the concurrence of the Superintendent, QA Division, or his alternate for establishment of

procurement requirements to assure the quality of the product.

17.2.7.1.2 Evaluation of vendor, supplier or contractor capabilities are based on records of previous supply or performance or review of quality assurance programs or audit of supplier facilities, practices, or a combination thereof.

17.2.7.1.3 Review of vendor, supplier or contractor qualifications shall be assessed at periodic intervals commensurate with the importance, complexity, quantity of the product or services being purchased.

17.2.7.2 Requisitions for Nuclear Safety Related Quality Assured items shall contain a phrase that clearly indicates the Quality Status of such items.

17.2.7.2.1 Procurement documents include the identification of nonconformances that require approval by PECo for disposition.

17.2.7.3 Documentary evidence that material and equipment conform to the procurement requirements shall be available at the site prior to installation or use of such material in accordance with PBAPS Administrative Procedures.

17.2.7.4 Receipt inspection is the responsibility of the QA Division QC Section and shall be performed in accordance with the QA Division Procedures and Instructions Manual.

17.2.7.4.1 Receipt inspections are performed to verify that material components or parts received conform to the purchase order requirements.

17.2.7.4.2 Receipt inspection includes, as appropriate, visual examination of physical properties, determination and identification of marking or labeling, review and inspection of quality assurance documentation to verify conformance with the purchase order specifications and requirements.

17.2.7.4.3 Control and identification status of the receipt material, parts or components are accomplished in accordance with Administrative Procedures.

17.2.7.4.4 Nonconforming material, parts, or components are identified, segregated and controlled in accordance with Administrative Procedures.

17.2.7.5 Procurement documents include, as appropriate, hold points or inspection points for PECo to verify compliance with Purchase Order Specifications.

17.2.7.5.1 Shop inspection of vendors who perform maintenance service work on components from PBAPS shall be performed by QA Division QC Section, other cognizant personnel of PECo or a qualified consultant retained by PECo for this purpose, when verification of procurement requirements cannot be determined upon receipt.

17.2.7.6 Engineering and Research Department control of purchased material, equipment, and services is in accordance with Volume I of the PBAPS QA Plan.

17.2.8 Identification and Control of Materials, Parts, and Components

17.2.8.1 Measures are established to identify and control materials, parts or components in accordance with written procedures and instructions and apply to the

fabrication, storage, installation or use of the material, parts or components.

17.2.8.2 The identification and control of material, parts or components associated with design change activities are delineated in Administrative Procedures and cover such items as traceability to specifications, purchase orders, quality assurance documentation, fabrication and installation inspection, and functional verification tests prior to use or placement in operation.

17.2.8.3 All components associated with the operation of safety-related systems shall be appropriately identified, so as to permit ready reference to plant procedures, documents and drawings.

17.2.8.3.1 The Maintenance and Modification Activities shall conform to the procedures established to control materials, parts, and components as prescribed in Administrative Procedures.

17.2.8.4 Q-material, parts or components are identified and controlled by the use of a quality control conformance tag which have information referenced and traceable to the purchase order and applicable quality assurance requirements.

17.2.8.4.1 Material or equipment thus tagged remains in the Storeroom until required for use.

17.2.8.5 Engineering and Research Department identification and control of materials, parts, and components is in accordance with Volume I of the PBAPS QA Plan.

17.2.9 Control of Special Processes

17.2.9.1 The Maintenance Division in conjunction with other departments within the company, and outside consultants when necessary, are responsible for development of special processes such as welding, heat treating, and nondestructive testing. These processes and the personnel implementing them are qualified for these activities.

17.2.9.1.1 Measures are established to control special processes in accordance with written procedures, instructions and drawings. Review and approval is accomplished in accordance with Administrative Procedures.

17.2.9.1.1.1 Special instructions, procedures and drawings are furnished in accordance with applicable codes, standards, specifications, criteria, and other supplementary requirements. Special processes may be reviewed by cognizant PECo personnel or outside consultants.

17.2.9.1.2 The Maintenance Division is responsible for the control of the Special Process initiated by the EP Department. Additional control and assistance is furnished by personnel from the Engineering and Research Department.

17.2.9.1.3 Certification of welders is kept current through records of qualifying tests, recording of welds on current work, retraining and qualifying for specialty work in accordance with Maintenance Administrative Procedures and Section IX of the ASME B&PV Code.

17.2.9.2 The nondestructive testing procedures for the In-Service Inspection are written in accordance with applicable codes, standards and specifications.

17.2.9.2.1 NDT procedures require that personnel performing tests be qualified in accordance with the recommendations of the American Society for

Nondestructive Testing Practice No. SNT-TC-1A, "Recommended Practice for Nondestructive Testing Personnel Qualification and Certification" - 1971.

17.2.9.3 Results of special processes performed are documented in accordance with approved instructions and procedures.

17.2.9.4 Engineering and Research Department control of special processes is in accordance with Volume I of the PBAPS QA Plan.

17.2.10 Inspection

17.2.10.1 A program for the inspection of quality-related activities is established through administrative and implementing procedures to verify conformance with applicable procedures, instructions and drawing requirements.

17.2.10.1.1 The preparation and control of procedures, instructions and drawings for inspection are in accordance with Administrative Procedures.

17.2.10.2 The inspection program for modifications and non-routine or major maintenance work is accomplished by personnel independent of the group or individual performing the work.

17.2.10.2.1 Procedures for modifications, major and non-routine maintenance include appropriate hold points or inspection points with acceptance criteria to verify compliance with procedure requirements.

17.2.10.2.2 The procedures include the characteristics to be inspected and the identification of the individual or group responsible for verification.

17.2.10.2.3 Verification of satisfactory completion of inspection points are documented and are included in the documentation associated with the performance of the work.

17.2.10.2.4 Verification of equipment operability following maintenance and modification work is accomplished along with inspection of the work area for safety, cleanliness and health physics practices.

17.2.10.2.5 The program for inspection of activities affecting quality in the design of minor modifications to verify conformance with documented instructions consists of the following:

1. Inspections are carried out during the modification to assure implementation of the procedures, drawings and instructions for each modification. Inspections are in accordance with the original design bases requirements or acceptable alternates.

2. Both inspection and process monitoring shall be provided when control is inadequate without both.

17.2.10.3 The code authorized inspector assures that the ASME B&PV Code inspection requirements are performed in accordance with written approved procedures and accomplished by qualified personnel in accordance with the PBAPS OQA Plan and Administrative Procedures.

17.2.10.4 Personnel performing Quality Control inspections are qualified in accordance with applicable industry standards and company training programs. Certifications of inspector qualifications are

maintained in accordance with Administrative Procedures.

17.2.10.4.1 Quality control inspections of work performed by the Maintenance Division shall be performed in accordance with Administrative Procedures by individuals other than those who performed the activity being inspected.

17.2.10.4.2 Quality control inspections of work performed by the Construction Division shall be performed in accordance with Administrative Procedures by individuals other than those who performed the activity being inspected.

17.2.10.4.3 Quality control inspections of instrument maintenance shall be performed in accordance with Administrative Procedures by individuals other than those who performed the activity being inspected.

17.2.10.5 The QA Division performs monitoring or surveillance of selected quality-related work-in-progress activities to verify that certain aspects of the Quality Assurance Program are performed adequately and in compliance with program and procedural requirements.

17.2.10.5.1 Procedures are reviewed in the course of QA Audits, Surveillances and monitoring to assure that necessary inspection points are included and that a mechanism is provided for the documentation of inspection results.

17.2.10.6 For major modifications, inspection procedures address the original inspection criteria which were used during the construction or modification of Peach Bottom Atomic Power Station. These original inspection procedures or updated or modified inspection requirements made necessary or desirable

due to changes in the state of the art or upgraded Codes and Standards are followed in the implementation of major modifications.

17.2.10.7 Engineering and Research Department inspections are in accordance with Volume I of the PBAPS QA Plan.

17.2.11 Test Control

17.2.11.1 A test program shall be established to assure that all testing required to demonstrate that an item will perform satisfactorily in service is identified and documented, and that the testing is performed in accordance with written test procedures which incorporate or reference the requirements and acceptance limits contained in the applicable Technical Specifications and design documents. The test program shall cover all required tests, including, as appropriate, qualification tests, post maintenance or modification tests, and operational surveillance tests to verify continued satisfactory performance during operation.

17.2.11.1.1 The surveillance test program is established to assure that the instruments, components and systems shall perform satisfactorily in service and are in conformance with the requirements and acceptance limits contained in applicable design documents.

17.2.11.1.2 Testing of instruments, components and systems are performed by qualified personnel in accordance with the OQA Plan Surveillance Testing Activity, implementing procedures and industry standards.

17.2.11.2 Instructions, procedures, and drawings are documented to give those performing the surveillance tests the proper guidance and prerequisites for accomplishing the required work.

17.2.11.3 Overall control of tests is accomplished by the Shift Operations personnel in order to assure that components, systems and instruments being tested do not affect the safe operation of the plant.

17.2.11.4 Testing requirements include provisions for assuring that all prerequisites are met, that proper and calibrated instrumentation is used and that suitable environmental conditions prevail.

17.2.11.5 The surveillance test instructions, procedures, and drawings are designed to permit evaluation of the system's performance based on acceptance-rejection criteria as outlined in PBAPS Technical Specifications.

17.2.11.6 The surveillance test instructions, procedures, and drawings include provisions for adequate and appropriate test instrumentation.

17.2.11.7 Results of surveillance tests are documented on approved forms and evaluated by cognizant staff personnel to assure that test requirements have been satisfied.

17.2.11.7.1 Unsatisfactory test results are documented and corrective action taken in accordance with Administrative Procedures.

17.2.11.8 Tests required to prove safety systems, which have had preventive or corrective maintenance or modifications performed on them, are delineated in procedures to assure that these structures, systems, and components meet required and acceptance limits. These tests are generally those detailed in the Technical Specificatons as Surveillance Tests.

17.2.11.9 The intent of the In-Service Inspection Program is to assure that plant components perform satisfactorily under all conditions. The program shall include baseline examinations and periodic examinations in accordance with Technical Specifications and shall extend through the life of the plant.

17.2.11.10 Engineering and Research Department test control is in accordance with Volume I of the PBAPS QA Plan.

17.2.12 Control of Measuring and Test Equipment

17.2.12.1 Procedures, instructions or drawings are provided for proper control and periodic calibration and adjustment of measuring and test equipment. Measuring and Test Equipment shall be identified such that calibration data records are traceable.

17.2.12.1.1 Equipment included in this program include measuring instrumentation, test instruments, tools, gauges, and standards used in conjunction with safety-related equipment and instrumentation.

17.2.12.2 Reference standards used for calibrating measuring and test equipment have an accuracy level, acceptable calibration ranges, and precision that are equal to or better than those required of the measuring and test equipment.

17.2.12.2.1 The accuracies of measuring and test equipment and the reference standards are chosen such that the equipment being calibrated can be calibrated and maintained within the required tolerances.

17.2.12.2.2 Measuring and test equipment are calibrated utilizing reference standards whose calibration has a known valid relationship to nationally recognized standards

or accepted values of natural physical constants. If no national standards exist, the basis for calibration is documented.

17.2.12.3 Tools, gauges, and instruments required by the Engineering, Mechanical, and Electrical Sections are identified and shall be calibrated and adjusted to assure accuracy.

17.2.12.4 The method and frequency of calibration of instruments is documented and shall be based on the type of equipment, stability characteristics, required accuracy and any other conditions affecting measurement control.

17.2.12.5 When tools, gauges or instruments are found outside the calibration tolerance, a review shall be performed and documented to determine the effect of the deviation on plant equipment and instrumentation since the last calibration date.

17.2.12.6 Records of instrument calibrations and tests shall be maintained and all equipment marked in accordance with instructions, procedures, and drawings to indicate calibration status.

17.2.12.7 Engineering and Research Department control of measuring and test equipment is in accordance with Volume I of the PBAPS QA Plan.

17.2.13 Handling, Shipping and Storage

17.2.13.1 Measures are established by instructions, procedures and drawings to control handling, preservation, storage, cleaning, packaging and shipping requirements with regard to plant components, equipment, materials, special nuclear materials and

radioactive wastes. These measures shall be accomplished by qualified individuals.

17.2.13.2 Storeroom handling and storage of material and equipment is in accordance with standard Stores practices and procedures which comply with the OQA Plan.

17.2.13.3 Purchase requisitions include, as appropriate, specifications and instructions for adequate marking to identify, maintain, and preserve the shipment including indication of the presence of special environments or the need for special control to preclude damage, loss, or deterioration.

17.2.13.3.1 Packaging requirements are delineated, as necessary, to avoid deleterious effects of shock, vibration, physical damage and protection against environments.

17.2.13.3.2 Shipping requirements are delineated, as necessary, to provide adequate protection during loading and transit; labeling requirements are to be applied in a manner that is clearly visible and remain legible to specify special controls or handling instructions.

17.2.13.4 Engineering and Research Department handling, shipping, and storage are controlled by Volume I of the PBAPS QA Plan.

17.2.14 Inspection, Test, and Operating Status

17.2.14.1 Measures are established by instructions, procedures, and drawings to indicate through the use of markings such as stamps, tags, labels, routing cards or other means, the schedule or status of inspections and tests to be, or being performed upon individual systems or components of the station.

17.2.14.2 These measures provide for the identification of items which have satisfactorily passed the required inspections and tests as scheduled to preclude inadvertent bypassing of such inspections and tests.

17.2.14.2.1 Implementation of these measures is verified through QA Division inspections, monitoring, audits, and surveillances conducted in accordance with the OQA Plan. These activities assure that the required inspections and tests are procedurally controlled as required by the OQA Plan.

17.2.14.3 The operating status of components under test or inspection are indicated and controlled through the use of the book entitled 'Rules for Permits & Blocking', procedure check list, and logs to prevent inadvertant use.

17.2.14.4 Inspection status and test status for the receipt and storage of material or components is through the application of the "Quality Control Conformance Data" tag to items which have satisfactorily passed receipt inspection. Incomplete receipt and storage status of items is noted by application of "hold" tags and segregating.

17.2.14.5 Defective material, parts or components are promptly identified, tagged and recorded to indicate operating status of such equipment and to prevent its inadvertant use.

17.2.14.6 The PBAPS Technical Specifications establish the requirements for the safe operation of the plant, including provisions for periodic and non-periodic tests and inspections of various structures, systems and components. Periodic tests are those tests delineated in the OQA Plan Surveillance Testing Activity and non-periodic tests are those proof tests performed following modifications or major maintenance.

17.2.14.7 Implementation of these measures shall be verified through the QA Division Auditing and Quality Control program conducted in accordance with the OQA Plan. These activities shall assure that the required inspections and tests are procedurally controlled as required by the OQA Plan.

17.2.14.8 Engineering and Research Department inspection, test, and operating status are controlled by Volume I of the PBAPS QA Plan.

17.2.15 Nonconforming Materials, Parts or Components

17.2.15.1 Measures are established and implemented by means of Administrative Procedures, to control materials, parts, or components which do not conform to requirements to prevent their inadvertant use or installation. These measures include activities such as procurement, receipt insepction, document control, equipment repairs, testing and operations. Procedures require the use of appropriate forms such as the MRF (maintenance request form), "QA Hold Tag" for receipt inspection, document change forms, QA Nonconformance forms and operating report forms. The control measures established shall include, as appropriate, prodedures for the following functions:

1. Identification

2. Segregation where necessary and possible; otherwise identification shall serve this function.

3. Disposition covering:

   (a) Restoration to conforming status, or

   (b) Replacement with conforming material, or

(c) Acceptance for interim use until replaced, or

(d) Acceptance for use "as is".

4. Procedures require documentation of each of the above items from identification to final disposition. Reviews and approvals of the above are delineated in appropriate procedures.

17.2.15.2 Nonconforming materials, parts or components identified during receipt inspection are tagged, segregated and controlled in accordance with Administrative Procedures to prevent their inadvertant use. A "QA HOLD" tag is utilized for control of nonconforming material which identifies the nonconforming items, describes the nonconformance and indicates the status of the disposition.

17.2.15.3 It is PECo's policy and intent that nonconforming materials, parts, or components not be installed in the Peach Bottom Units 2 and 3. However, when the non-conformity is due to the lack of documentation and, where technical adequacy is demonstrated to PECo's satisfaction, some nonconforming materials, parts, or components may be permitted. Administrative Procedures identify the responsible individual and authority for disposition and approval of nonconforming materials, parts or components.

17.2.15.4 Nonconforming materials, parts or components identified by QA Division Personnel shall be reported to Station Management in accordance with applicable procedures.

17.2.15.5 Significant nonconformances are reviewed and analyzed on an "as occurring" basis by the responsible Superintendents, POR Committee and NRB. Results of these reviews are reported to the Vice President, Electric Production Department, and Manager, Nuclear Production.

17.2.15.6 Vendors supplying materials, parts, or components are required to notify PECo of a nonconformance to the Purchase Order requirements and to obtain approval from PECo prior to disposition.

17.2.15.7 Engineering and Research Department nonconforming materials, parts, and components are controlled by Volume I of the PBAPS QA Plan.

17.2.16 Corrective Action

17.2.16.1 Measures are estabished, by means of Administrative Procedures, to assure that conditions adverse to quality are promptly identified and corrected. PECo defines conditions adverse to quality as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformance to specified requirements. The measures established are consistent with their importance to safety and include the following:

1. In cases of conditions adverse to quality, the cause of the condition is determined and documented, and corrective action taken and documented to preclude repetition.

2. Reports to appropriate levels of managment of each condition adverse to quality and documentation of such reports.

17.2.16.2 The responsibility for the above is assigned to a cognizant staff member in the affected activity. It is the responsibility of these cognizant staff members to identify and correct conditions adverse to quality and inform Station Management.

17.2.16.2.1 Administrative Procedures require that modification and repair procedures include the reworking of components, systems or structures in accordance with

original specifications, instruction manuals, instructions, prints, codes and standards. Appropriate testing and inspection requirements are included to verify acceptability of the repairs or modifications.

17.2.16.3 The QA Division through its monitoring, inspections, audits and surveillances may identify conditions which require corrective action and shall report to Station Management for corrective action in accordance with applicable procedures.

17.2.16.4 The status of noncompliances identified by QA Division as a result of monitoring, inspections audits, or surveillances are reported to the appropriate supervision and the Vice President, Electric Production Department, and Manager, Nuclear Production.

17.2.16.5 The QA Division follows-up corrective action to determine the adequacy and effectiveness of such action.

17.2.16.6 Corrective action taken in response to an item identified by QA personnel reported in accordance with Section 17.2.15.4 of this Program is reviewed or approved by QA Division.

17.2.16.7 Engineering and Research Department corrective action is controlled by Volume I of the PBAPS QA Plan.

17.2.17 Quality Assurance Records

17.2.17.1 Sufficient records shall be maintained in accordance with the Administrative and implementing procedures to provide documentary evidence that activities affecting quality are performed adequately and in

compliance with the OQA program. The requirements shall include collection, filing, storing, maintenance and disposition of records that are required by the OQA Plan and by other codes, standards, specifications, or regulatory requirements. OQA records shall include operating logs, maintenance and modification procedures, and related inspection results, reportable occurrences, and other records required by technical specifications. The procedures to be employed to perform the required activities shall be planned and documented.

17.2.17.2 The significance of the event covered by a record type and the contribution of the record to the ability to reconstruct significant events shall be considered in establishing retention periods. Retention periods shall satisfy applicable statutory requirements.

17.2.17.3 Storage requirements for the maintenance, preservation and protection of records from the time of entry into the Nuclear Records Management System until their ultimate disposal shall be established.

17.2.17.3.1 The records shall be stored in predetermined locations as necessary to meet the requirements of applicable standards, codes, and regulatory agencies.

17.2.17.4 Applicable design specifications, procurement documents, test procedures, operational procedures or other documents shall specify the quality records to be generated. All such records shall be legible, filled out to the extent required by procedure and adequately identifiable to the item or activity involved.

17.2.17.4.1 The applicable quality records shall be considered valid only if stamped, initialed, signed or otherwise authenticated and dated by authorized personnel. These records may be either the original or a reproduced copy.

17.2.17.5 Types of quality records with minimum retention periods are listed in PBAPS Technical Specifications. It should be recognized that the nomenclature of these records may vary. For records not listed in the Technical Specifications, the type most nearly describing the record in question should be followed with respect to its retention period.

17.2.17.5.1 The QA Division and other organizations responsible for record control are defined in the administrative and implementing procedures.

17.2.17.6 Original design, manufacturing, installation records and specifications are controlled and maintained in accordance with PBAPS QAP Volume I.

17.2.18 Audits

17.2.18.1 Compliance with the requirements as set forth in the Operation, Maintenance, Training, Fuel Handling, Modification, Surveillance Testing, Radiological and Environmental Monitoring, Fire Protection, Physical Security, Emergency Plan, Stores and Purchasing, Health Physics and Chemistry (Radioactive Waste and Material), and In-Service Inspection Activities are assured through a planned and periodic program of audits and surveillances and corrective action as required by audit findings.

17.2.18.1.1 Auditing of this quality assurance program complies with the guidance provided in ANSI N45.2.12 - 1974 as described in Appendix A, FSAR Section 17.2.

17.2.18.2 Audits and surveillances are performed by personnel from the Quality Assurance Division, who are independent of the Nuclear Generating Division personnel. The QA Division may request assistance of personnel from other disciplines who are independent of areas being audited.

17.2.18.2.1 These personnel are trained and indoctrinated in quality assurance policy and implementing audit procedures and forms.

17.2.18.3 The audits and surveillances are performed on the basis of the status and importance to safety and in accordance with written procedures and check lists to confirm by objective evaluation of work areas, activities, processes, items, reviews, approvals and records, that the OQA Program is implemented in accordance with instructions, procedures and drawings.

17.2.18.4 The results of audits and surveillances are documented by the Superintendent, QA, and distributed to the Vice President, Electric Production Department, Manager, Nuclear Production, Superintendent, Nuclear Generation Division, Station Superintendent, and other concerned supervision.

17.2.18.5 The Superintendent, QA, is responsible to assure that timely corrective action of noncompliances, as identified in QA audits or surveillances, is taken by responsible management.

17.2.18.6 When corrective action measures are indicated, reaudits or QC verification inspections of applicable areas is conducted to assure implementation and effectiveness of corrective actions.

17.2.18.7 Surveillance is provided as directed by the Superintendent, QA Division, to assure quality during the work activity.

17.2.18.8 In addition to the surveillance of quality-related activities, formal audits are conducted on the basis of status and importance to safety. The frequency and scope of audits are in accordance with the QA Division Procedures and Instructions Manual.

17.2.18.9 The Superintendent, Quality Assurance, is responsible for the performance of audits and surveillances of the various aspects of the OQA Plan to determine the adequacy and effectiveness of the Plan.

17.2.18.10 Audits required by the PBAPS Technical Specifications are conducted under the cognizance of the Nuclear Review Board.

17.2.18.11 Engineering and Research Department audits are controlled by Volume I of the PBAPS QA Plan.

APPENDIX 17.2A

REGULATORY GUIDES AND ANSI STANDARDS

ELECTRIC PRODUCTION DEPARTMENT

OPERATIONS PHASE QUALITY ASSURANCE

PECo will follow the QA guidelines included in WASH 1284 (10/26/73), "Guidance on Quality Assurance Requirements During the Operations Phase of Nuclear Power Plants"; WASH 1309 (5/10/74) Guidance on Quality Assurance Requirements During the construction Phase of Nuclear Power Plants"; WASH 1283, (5/24/74) "Guidance on Quality Assurance Requirements During Design and Procurement Phase of Nuclear Power Plants" - Rev. 1; and other Regulatory Guides and Industry Standards applicable for operations of PBAPS as described in this Appendix and Appendix 17.2B.

The Peach Bottom OQA Plan is described by PBAPS QAP Vol. III, Operations Phase, which invokes the Engineering and Research Department PBAPS QAP Vol. I, for major modifications which occur during the operations phase. The Regulatory Guides and ANSI Standards included in the above listed WASH documents which are applicable to Engineering and Research Department activities during the operational phase are addressed in Appendix 17.2B.

PECo has conducted an extensive review of the above listed WASH documents along with the Regulatory Guides and Industry Standards. The standards were reviewed with respect to those activities occurring during the operational phase that are comparable in nature and extent to related activities occurring during initial design and construction. The recommendations and guidance of the regulatory guides and ANSI Standards which are applicable to nuclear plant operations are incorporated in the PBAPS QA Plan. Administrative and implementing procedures affected by any revisions of the QA Plan will be revised as required in accordance with Administrative Procedures.

Referenced guides or standards addressed by the Regulatory Guides and ANSI Standards are excluded unless addressed separately.

1. Regulatory Guide 1.8 - 8/10/71, Personnel Selection and Training. Endorses ANSI N18.1 - 1971.

   Comply

2. Regulatory Guide 1.28 - 6/7/72, QA Program Requirements

   See Regulatory Guide 1.33.

3. Regulatory Guide 1.30 - August 1972, Quality Assurance Requirements for the Installation, Inspection and Testing of Instrumentation and Electrical Equipment. Endorses ANSI N45.2.4 - 1972.

   PECo shall comply with Regulatory Guide 1.30, 8/72, and ANSI N45.2.4 - 1972 for those activities occuring during the operational phase that are comparable in nature and extent to related activities occurring during the initial design and construction phase, except for the following alternates.

   a. ANSI N45.2.4 Paragraph 1.1 Scope - PECo's alternate to classification of Class I and IE instrumentation and control equipment is to apply the guidelines and requirements of this standard to PECo "Q-listed" items. (Those instruments, equipment and systems that prevent or mitigate the consequences of postulated accidents that could cause undue risk to the health and safety of the public.)

   b. ANSI N45.2.4 Paragraph 8, Preconstruction Verification - Subparagraph (3) requires the checking of records of protective measures maintained during storage for conformance to storage requirements. ANSI N45.2.2 - 1972, Paragraph 6.4, Control of Items in Storage, requires inspections and examination during the storage period. The responsibility within PECo for these inspections rest with the Stores Division. Compliance with these requirements for checking of records is assured through planned and periodic monitoring, audits and surveillances conducted by QA personnel along with monitoring Stores Division Activities by Stores Division Supervision.

   c. ANSI N45.2.4, Paragraph 7, Data Analysis and Evaluation - A program for processing, reviewing and analyzing electrical equipment and instrumentation inspection and test data for acceptability is provided in the Administrative Procedures which govern the repair, maintenance and testing of electrical equipment and instrumentation. Maintenance is controlled through the use of a work request form that has provisions for cognizant personnel sign-off after completion of the work.

Functional testing and calibration procedure include provision for review, analysis of data and approval by signature of cognizant personnel.

4. Regulatory Guide 1.33 - November 1972, Quality Assurance Program Requirements

PECo shall comply with Regulatory Guide 1.33, 11/72, which endorses ANSI N45.2 - 1971 and ANSI N18.7 - 1972 exclusive of other documents referenced.

5. Regulatory Guide 1.37 - 3/16/73, QA Requirements for Cleaning of Fluid Systems and Associated Components of Water-cooled NPP's. Endorses ANSI N45.2.1 - 1973.

Decontamination and cleanup of radioactive contaminated systems and components are not included in the scope of this response.

PECo shall comply with Regulatory Guide 1.37 - 3/16/73 and ANSI N45.2.1 - 1973 for those activities occurring during the operational phase that are comparable in nature and extent to related activities occurring during the initial desigr and construction phase except for the following alternate:

a. ANSI N45.2.1, Section 3.2, Water Quality Requirements - PH measurements are not required for conductivity values of less than or equal to 1 umho/cm. PECo utlilizes PH limits of 5.2 to 8.6 at 25 °c, uncorrected for CO2 and may apply conductivity measurements in place of total dissolved solids.

6. Regulatory Guide 1.38 - 3/16/73, QA Requirements for Packaging, Shipping, Receiving, Storage and Handling of Items for Water-cooled NPP's. Endorses ANSI N45.2.2 - 1972.

PECo shall comply with Regulatory Guide 1.38, 3/16/73, and ANSI N45.2.2 - 1972 for those activities occurring during the operational phase that are comparable in nature and extent to related activities occurring during the initial design and construction phase except for the following alternates:

a. ANSI N45.2.2, Paragraph 2.7, Classification of Items - PECo does not classify items into the four (4) levels described in this Standard. However, the specific guidance and recommendations which are appropriate to each class are applied to those items packaged, shipped, received, stored and handled through the use of procedures, original specifications, instructions and drawings as applicable.

b. ANSI N45.2.2, Sections 3 and 4 Packaging and Shipping - PECo utilizes the packaging and shipping requirements delineated in the original equipment specifications as part of our procurement requirements to suppliers or manufacturers. Those requirements and recommendations of Sections 3 and 4 are included in the original specifications as appropriate for the item being procured. Receipt inspection activities are in accordance with Section 5 of this Standard and are sufficient to identify packaging and shipping nonconformities.

c. ANSI N45.2.2, Section 6.1, Storage, - PECo does not classify items into four (4) levels for storage purposes as delineated in Paragraph 6.1.2. Stored items are placed in limited access controlled areas, and are segregated with respect to the Q-list classifiction of an item(s). The specific guidance and recommendations which are appropriate to each class are applied to those items stored through the use of procedures, specifications and manufacturers recommendations and instructions.

d. ANSI N45.2.2, Paragraph 6.4.2 (7), Care of Items - The rotating of certain electrical motors in storage, which must be energized to release an electrical brake, will be stored and maintained in accordance with manufacturers recommendations. Other motors, which can be rotated without energizing, will be maintained in accordance with the requirements of paragraph 6.4.2 (7) of this standard.

e. ANSI N45.2.2, Paragraph 6.6, Storage Records - Written records shall be prepared that include such pertinent information as storage location, inspection results and protection (care of items). Personnel access is controlled and limited to Stores Division personnel and visitors who are escorted by Stores Division personnel.

7. Regulatory Guide 1.39 - 3/16/73, Housekeeping Requirements for Water-Cooled NPP's, Endorses ANSI N45.2.3 - 1973.

PECo shall comply with Regulatory Guide 1.39, 3/16/73, and ANSI N45.2.3 - 1973 for those activities occurring during the operational phase that are comparable in nature and extent to related activities occurring during the design and construction phase except for the following alternates:

a. ANSI N45.2.3 - 1973, Paragraph 2.1, Planning - Zone II requirements for clean gloves, shoe covers, and head coverings will be determined by Health Physics personnel under the Radiation Protection Program and specific requirements listed on the Radiation Work Permit for entry in Zone II areas.

b. ANSI N45.2.3 - 1973, Paragraph 2.1, Planning - Material accountability for Zones II and III shall be controlled by procedural requirements, periodic inspections and surveillance of areas for acceptable housekeeping practices. Implementing procedures for activities such as maintenance and modifications of areas and equipment to eliminate foreign materials that may have a detrimental effect. Post maintenance or modification inspections for housekeeping and cleanliness shall be conducted and documented in accordance with administrative controls.

c. ANSI N45.2.3 - 1973, Paragraph 2.1, Planning - Personnel accountability for Zone III will be controlled as determined by the administrative controls for locked doors and radiation work permit requirements in lieu of specific access registers.

8. Regulatory Guide 1.54 - June 1973, QA Requirements for Protective Coatings Applied to Water-cooled NPP's. Endorses ANSI N101.4-1972.

This Regulatory Guide is addressed in Appendix 17.2B.

9. Regulatory Guide 1.58 - Revision 1, September 1980, "Qualifications of Nuclear Power Plant Inspection, Examination and Testing Personnel." Endorses ANSI N45.2.6 - 1978.

PECo will comply with Regulatory Guide 1.58, Rev. 1, and ANSI N45.2.6 - 1978 except for the following clarification and alternates:

a. Regulatory Guide 1.58, Rev. 1, Section C.1 and ANSI N45.2.6 - 1978, Subsection 1.2 states that the standard applies to "personnel who perform inspections, examinations and tests." PECo personnel who inspect equipment as part of routine plant maintenance, in other than a quality control function; and plant staff personnel (as defined in the PBAPS Technical Specifications), who perform, approve test procedures and test results and direct or supervise the conduct of individual tests, will be qualified in accordance with ANSI N18.1 - 1971 in lieu of ANSI N45.2.6 - 1978.

b. ANSI N45.2.6 - 1978, Subsection 3.5 presents experience recommendations for candidates. Experience in maintenance, modification and operating activities is considered related experience since such experience provides training in the safety aspects of the facility.

10. Regulatory Guide 1.64 - October 1973, Quality Assurance Requirements for the Design of Nuclear Power Plants. Endorses ANSI N45.2.11 - Draft July 1973.

    PECo shall comply with Regulatory Guide 1.64, October 1973, and ANSI N45.2.11 - July 1973 for those activities occurring during the operational phase that are comparable in nature and extent to related activities occurring during the initial design phase with the following clarification.

    a. Plant design changes are categorized into Major and Minor Modifications. Design for Major Modification is provided by the Engineering and Research Department as described in Appendix 17.2B. Major Modifications include the following categories:

        1. Changes to the reactor coolant pressure boundary, as defined in the ASME B&PV Code, Section XI and 10CFR50.2(V).

        2. Changes in electrical circuitry of the RPS, PCIS or ECCS, except addition of alarms, indicating lights, or other changes which do not change or electrically interface with the safety function.

        3. Changes to the nuclear monitoring system, except addition of alarms as indicating lamps.

        4. Changes requiring stress or seismic analyses.

        5. Changes that constitute a change in the facility as described in the FSAR, except addition of vents, drains, sample points and similar minor piping changes on other than the reactor coolant boundary.

        6. Changes which involve an unreviewed safety question as defined in 10CFR50.59.

    b. Minor plant modifications are accomplished under the controls of plant Administrative Procedures in accordance with the PBAPS OQA Plan.

11. Regulatory Guide 1.68 - November 1973, Preoperational and Initial Startup Test Programs for Water-cooled NPP's. Does not apply to the Operating Plant with full-term licenses.

12. Draft Regulatory Guide 1.70xx - April 1974, Additional Information, QA During Design and Construction.

This draft Regulatory Guide addresses to submittal of FSAR Section 17.1 and does not apply to the operating plant with a full-term license.

13. Regulatory Guide 1.74 - February 1974, QA Terms and Definitions, Endorses ANSI N45.2.10 - 1973.

    Comply

14. Regulatory Guide 1.88 - 1976 - Endorses ANSI N45.2.9 - 1974, Requirements for Collection, Storage and Maintenance of QA Records for NPP's.

    Comply

15. Regulatory Guide 1.116 - June 1976, endorses ANSI N45.2.8 - 1975, Supplementary QA Requirements for Installation, Inspection and Testing of Mechanical Equipment and Systems for the Construction Phase of NPP's.

    PECo shall comply with Regulatory Guide 1.116, June 1976 and ANSI N45.2.8 - 1975 for those activities occurring during the operational phase that are comparable in nature and extent to related activities occuring during the initial design and construction phase, except for the following alternates:

    a. ANSI N45.2.8, Paragraph 2.2, Procedures and Instruction - PBAPS Technical Specification requires compliance with ANSI N18.7 - 1972, Section 5.3 and Regulatory Guide 1.33, Appendix A. These requirements along with PECo's commitment to ANSI N18.7 - 1972 and N45.2 - 1971, provide adequate controls for the procedures and instructions addressed in this paragraph.

    b. ANSI N45.2.8, Paragraph 2.3, Results - PECo's commitment to ANSI 18.7 - 1972 provides adequate guidance for the documentation and review of the results of inspections and tests.

    c. ANSI N45.2.8, Paragraph 3.4, Physical Condition - PECo's response to ANSI N45.2.1, N45.2.2 and N45.2.13 provide adequate guidance and control for the requirement that mechanical items are in accordance with specified requirements and that the quality has been maintained.

16. Regulatory Guide 1.123 - October 1976 - Endorses ANSI N45.2.13 - 1976, QA Requirements for Control of Procurement of Items and Services for NPP's.

    PECo shall comply with Regulatory Guide 1.123, October 1976, and ANSI N45.2.13 - 1976 for those activities occurring during the operational phase that are comparable in nature and extent to related activities occurring during the initial design and construction phase.

17. Regulatory Guide 1.146 - August 1980, "Qualification of Quality Assurance Program Audit Personnel for Nuclear Power Plants." Endorses ANSI/ASME N45.2.23 - 1978.

    PECo will comply with Regulatory Guide 1.146, August 1980 and ANSI/ASME N45.2.23 - 1978 except for the following alternates:

    a. ANSI/ASME N45.2.23 - 1978, Subsection 2.3, states requirements for qualification of Lead Auditors. In lieu of the stated requirements, PECo will qualify personnel in accordance with the requirements presented below. These alternate requirements will provide PECo with sufficient flexibility to qualify competent personnel with initial technical experience in a more effective manner.

       The proration of credits between initial experience requirements and additional experience gained as an assistant to a Lead Auditor assures that highly qualified personnel will be available as audit personnel in a more timely fashion.

       Substitute the following for Paragraph 2.3.1 of ANSI/ASME N45.2.23 - 1978:

       a. 2.3.1 - Education and Experience. The prospective Lead Auditor shall have verifiable evidence that a minimum of ten (10) credits under the following scoring system have been accumulated.

       b. 2.3.1.1 - Education (4 credits maximum). Associate Degree from an accredited institution score one (1) credit or if the degree is an engineering, physical sciences, mathematics or quality assurance, score two (2) credits or,

          A Bachelor Degree from an accredited institution score two (2) credits or if the degree is in engineering, physical sciences, mathematics or quality assurance, score three (3) credits; in addition, score one (1) credit for a Master Degree in engineering, physical sciences, business management or quality assurance from an accredited institution.

c. 2.3.1.2 a - Initial Experience Prior to Assignment (6 credits maximum). Technical experience in engineering, manufacturing, construction, operation, maintenance or quality assurance related to the aforementioned activities, score one (1) credit for each full year with a maximum of five (5) credits for this aspect of experience.

If two (2) or more years of this experience have been in the nuclear field, score one (1) additional credit.

d. 2.3.1.2 b - Additional Experinence (after assignment) (4 credits maximum). Experience in quality assurance, score one (1) credit for each full year (2 credits maximum) or,

Experience in auditing, score two (2) credits for each full year (3 credits maximum) or, Experience in nuclear quality assurance, score one (1) credit for each full year (3 credits maximum) or,

Experience in nuclear quality assurance auditing, score one (1) credit per every six months (4 credits maximum).

e. 2.3.1.3 - Other Credentials of Professional Competence (2 credits maximum). Certification of competency in engineering, science or quality assurance specialities issued and approved by a State Agency, or National Professional or Technical Society, score two (2) credits.

f. 2.3.1.4 - Rights of Management (2 credits maximum). The Lead Auditor's employer may grant up to one (1) credit for other performance factors applicable to auditing which may not be explicitly called out in this Standard such as leadership, sound judgement, maturity, analytical ability, tenacity and past performance, plus one (1) credit for satisfactory completion of Lead Auditor Training Program.

18. ANSI N45.2.5, 1974 - Supplementary QA Requirements for Installation, Inspection and Testing of Structural Concrete and Structural Steel During the Construction Phase of NPPs.

This regulatory guide is addressed in Appendix 17.2B.

19. Draft Standard ANSI N45.2.12 - 1974, Requirements for Auditing QA Programs for NPPs. COMPLY with the following alternates:

a. Paragraph 4.3.1 - Preaudit Conference - A preaudit notification is given to plant management in an informal manner due to daily communication between QA and plant personnel.

b. Paragraph 4.3.2.5, 4.3.3 - Nonconformities are discussed in the exit discussion and are documented and issued to responsible personnel.

c. Paragraph 3.3, 4.2.4 - A formal audit schedule is documented and distributed to responsible management on a monthly basis delineating the audit of specific activities for the following month. Additional audits are performed with a frequency commensurate with the activities importance to safety.

20. WASH 1284 dated 10/26/73, Section D Regulatory Staff Comments and Supplementary Guidance

a. Paragraph 1 - Organization

PECo shall comply with WASH 1284, dated 10/26/73, Section D, Paragraph 1 for those activities occuring during the operational phase of PBAPS.

b. Paragraph 2 - Training of Personnel

PECo shall comply with WASH 1284, dated 10/26/73, Section D, Paragraph 2 for those activities occuring during the operational phase of PBAPS.

21. 10CFR50.55a Codes and Standards

PECo complies with the codes and standards delineated in the PBAPS FSAR, Appendix 17.2A and 2B

22. 10CFR55 - Operators' Licenses

COMPLY

23. 10CFR50, Appendix B - Quality Assurance Criteria for Nuclear Power Plants

COMPLY

PECo, PBAPS, FSAR Subsection 17.2, Operations Phase Quality Assurance Program, meets the requirements of 10CFR50, Appendix B.

PBAPS

APPENDIX 17.2B

REGULATORY GUIDES AND ANSI STANDARDS ENGINEERING AND RESEARCH DEPARTMENT

The Engineering and Research Department follows ANSI Standards and NRC Regulatory Guides as described below:

1. Regulatory Guide 1.58, Revision 1, September 1980, "Qualifications of Nuclear Power Plant Inspection, Examination and Testing Personnel." Endorses ANSI N45.2.6-1978.

   The Engineering and Research Department follows Regulatory Guide 1.58, revision 1, September 1980, and ANSI N45.2.6-1978 exclusive of other documents referenced therein.

   Two particulars of ANSI N45.2.6-1978 are implemented by the Engineering and Research Department through alternate equivalent means as described in Appendix 17.2A, Section 9.

2. Regulatory Guide 1.30, August 11, 1972, Quality Assurance Requirements for the Installation, Inspection, and Testing of Instrumentation and Electric Equipment. Endorses ANSI N45.2.4 - 1972.

   The Engineering and Research Department follows Regulatory Guide 1.30, August 11, 1972 and ANSI N45.2.4-1972 exclusive of other documents referenced therein.

   One particular of ANSI N45.2.4-1972 is implemented by the Engineering and Research Department through alternate equivalent means described below.

   a. As an alternative to ANSI B31.7-1969 (referenced in ANSI N45.2.4-1972, Section 9, Item 6) PECo follows USAS B31.1.0-1967 since Peach Bottom Units 2 and 3 were constructed to USAS B31.1.0-1967.

3. Regulatory Guide 1.37, 3/16/73, Quality Assurance Requirements for Cleaning of Fluid Systems and Associated Components of Water-Cooled Nuclear Power Plants. Endorses ANSI N45.2.1-1973.

The Engineering and Research Department follows Regulatory Guide 1.37, 3/16/73, and ANSI N45.2.1-1973 exclusive of other documents referenced therein, except for the following alternate:

a) ANSI N45.2.1, Section 3.2, Water Quality Requirements - pH measurements are not required for conducting valves of ≤ 1 umho/cm. PECo utilizes pH limits of 5.2 to 8.6 at 25°C, uncorrected for CO2 and may apply conductivity measurements in place of total dissolved solids.

4. Regulatory Guide 1.38, 3/16/73, Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Water-Cooled Nuclear Power Plants. Endorses ANSI N45.2.2-1972.

The Engineering and Research Department follows Regulatory Guide 1.38, 3/16/73 and ANSI N45.2.2-1972 exclusive of other documents referenced therein.

Two particulars of ANSI N45.2.2-1972 are implemented by the Engineering and Research Department through alternate equivalent means described below.

a. With regard to paragraph 7.4 (Inspections of Equipment and Rigging) Engineering and Research Department has developed an equivalent alternate approach. An internal procedure covering inspection of hoisting and rigging equipment is being implemented. This procedure includes provisions for inspection of hoisting and rigging equipment prior to use, and periodically thereafter inspection required and documentation of test results.

b. As an equivalent alternative to the four levels of classification established by ANSI N45.2.2-1972, Section 2.7, each component is treated on an individual basis. The Engineering and Research Department requires that each specification contain handling storage, packaging, and shipping information. This information incorporates the guidance and recommendations which are appropriate to each classification for packaging, shipping, handling, and storage of equipment or materials described in the specification.

5. Regulatory Guide 1.64, Revision 1, February, 1975, Quality Assurance Requirements for the Design of Nuclear Power Plants. Endorses ANSI N45.2.11-1974.

The Engineering and Research Department follows Regulatory Guide 1.64, Rev. 1, February, 1975 and ANSI N45.2.11-1974 exclusive of other documents referenced therein.

6. ANSI N45.2.8-1975, Supplementary Quality Assurance Requirements for Installation, Inspection, and Testing of Mechanical Equipment and Systems for the Construction Phase of Nuclear Power Plants.

   The Engineering and Research Department follows ANSI N45.2.8-1975 exclusive of other documents referenced therein. One particular of ANSI N45.2.8-1975 is implemented by the Engineering and Research Department through alternate equivalent means described below:

   a. Section 2.1 - This section requires the establishment of a formal and documented plan for each item of work. The PECo procedure specifies the issuance of Job Memoranda, which serve the equivalent purpose of outlining major project requirements.

7. Regulatory Guide 1.54, June, 1973, Quality Assurance Requirements for Protective Coatings Applied to Water-Cooled Nuclear Power Plants. Endorses ANSI N101.4-1972.

   The Engineering and Research Department follows Regulatory Guide 1.54, June, 1973 and ANSI N101.4-1972 exclusive of other documents referenced therein. One particular of ANSI N101.4-1972 will be implemented by the Engineering and Research Department through alternate equivalent means described below:

   a. In Paragraphs 5 and 6 PECo has initiated, prior to coating application, a procedure(s) that will ensure satisfactory application and inspection of coatings applied to Nuclear Facilities.

8. ANSI N45.2.5-1974, Supplementary Quality Assurance Requirements for Installation, Inspection, and Testing of Structural Steel and Structural Concrete.

   ANSI N45.2.5-1974 exclusive of other documents referenced therein will be implemented by the Engineering and Research Department through alternate equivalent means prior to placement of any structural steel or concrete at PBAPS Units 2 and 3.

9. ANSI N45.2.12 -1977 Requirements for Auditing of Quality Assurance Programs for Nuclear Power Plants.

   The Engineering and Research Department follows the guidance of ANSI N45.2.12 exclusive of other documents referenced therein.

   Four particulars of ANSI N45.2.12 - 1977 are implemented by the Engineering and Research Department through alternate equivalent means described below:

   a. Paragraph 3.2.1 requires a management policy statement which commits PECo to implement the requirements of this standard. This statement by PECo is provided in this Appendix to the FSAR and is not duplicated in the PBAPS QA plan. In order to reduce

the workload of maintaining written manuals and procedures up-to-date, it is our policy not to duplicate such commitments unnecessarily. The PBAPS QA Plan, Volume I, requires that audits be performed according to specific PECo procedures which follow ANSI N45.2.12-1977, Rev. 1, with alternatives as noted in paragraphs b, c, and d below. This QA Plan, Volume I, is signed by the Vice President of the Engineering and Research Department and constitutes the management policy statement regarding implementation of the requirements of this standard.

b. Paragraph 3.4, 3.5.2, and 3.5.3 - For long range audit planning, are placed on the QA Major Activity Schedule which is issued monthly and covers a 3-month period. Audits are scheduled by the Manager - QA and the frequency of audit is dependent on the level and importance of the activities which involve the Engineering and Research Department. The Manager - QA schedules sufficient audits to be performed to be able to evaluate the effectiveness and implementation of the Engineering and Research Department activities in support of the operation of Peach Bottom Units 2 and 3.

c. Paragraph 4.3.2.5 - PECo procedures require a post-audit conference with the audited organization to discuss all the audit findings. Conditions are identified by the audit team and discussed with the audited organization. For conditions requiring corrective actions, draft findings are issued and any disagreements between the audit team and the personnel of the audited organization present at the exit meeting are recorded on finding report forms. Later a full report of each audit is issued. The audited organization response at the exit meeting and subsequent written response to the PECo audit report constitutes the necessary acknowledgement.

d. Paragraph 4.5 - The PECo QA program accepts for closeout of an unsatisfactory audit finding only completed corrective action, not a schedule for action or a commitment for action. The audited organization is required to report to PECo the action taken, normally within 45 days of the date of the audit report transmittal letter. In some situations action to prevent recurrence may involve long range planning. In these cases, interim measures to prevent recurrence or to correct specific hardware may be reported but the finding is held open until corrective action is completed. The PECo QA program fully follows the guidance but not certain specific schedules of paragraph 4.5

10. Draft Standard ANSI N45.2.13 (Draft 3, Rev. 0, August, 1974), Quality Assurance Requirements for Control of Procurement of Items and Services.

    The Engineering and Research Department follows the guidance of ANSI N45.2.13 (Draft 3, Rev. 0, August, 1974) exclusive of other documents referenced therein.

11. Regulatory Guide 1.33, November 3, 1972, Quality Assurance Program Requirements (Operation). Endorses ANSI N45.2 - 1971 and N18.7 - 1972 (formerly ANS 3.2).

    The Engineering and Research Department follows Regulatory Guide 1.33, November 3, 1972, as it applies to ANSI N45.2-1971 exclusive of other documents referenced therein. ANSI N18.7 is considered applicable to plant operation and, as such, is not applicable to the activities of the Engineering and Research Department.

12. Regulatory Guide 1.39, 3/16/73, Housekeeping Requirements for Water-Cooled Nuclear Power Plants. Endorses ANSI N45.2.3-1973.

    The Engineering and Research Department follows Regulatory Guide 1.39, 3/16/73 and ANSI N45.2.3-1973 exclusive of other documents referenced therein. This is accomplished by requiring Engineering and Research Department personnel who work at the plant to follow the administrative conrols for housekeeping which are established by the Electric Production Department. Therefore, the alternatives to ANSI N45.2.3-1973 described in Appendix 17.2A, Section 7a, b and c apply to Engineering and Research Department activities at the plant site.

    Housekeeping/cleanliness requirements for that material storage and plant modification work which is the responsibility of Engineering and Research Department personnel are included in the Engineering and Research procedures governing these activities.

13. Regulatory Guide 1.88, October, 1976, Collection, Storage and Maintenance of Nuclear Power Plant Quality Assurance Records. Endorses ANSI N45.2.9 - 1974.

The Engineering and Research Department will follow the requirements of Regulatory Guide 1.88 and ANSI N45.2.9 exclusive of other documents referenced therin.

14. Regulatory Guide 1.146 - August 1980, "Qualification of Quality Assurance Program Audit Personnel for Nuclear Power Plants." Endorses ANSI/ASME N45.2.23 - 1978.

The Engineering and Research Department follows Regulatory Guide 1.146, August 1980 and ANSI/ASME N45.2.23 - 1978 exclusive of other documents referenced therin.

One particulars of ANSI/ASME N45.2.23 - 1978 are implemented by the Engineering and Research Department through alternate equivalent means as described in Appendix 17.2A, Section 17.