CE-1-A
Topical Report
January 1976
Rev. 10 - 9/28/79

C O M M O N W E A L T H E D I S O N C O M P A N Y

QUALITY ASSURANCE PROGRAM

FOR

NUCLEAR GENERATING STATIONS

COMMONWEALTH EDISON COMPANY
Post Office Box 767
Chicago, Illinois 60690

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

NOV 3 1979

Mr. W. F. Naughton
Nuclear Licensing Administrator
Boiling Water Reactors
Commonwealth Edison Company
P.O. Box 767
Chicago, IL 60690

Dear Mr. Naughton:

SUBJECT: NRC ACCEPTANCE OF REVISIONS TO QA TOPICAL REPORT

By letter dated September 24, 1979, you submitted Revision 10 to the Commonwealth Edison Topical Report No. CE-1-A, "Commonwealth Edison Company Quality Assurance Program for Nuclear Generating Stations." You indicated in your transmittal letter that the topical report and this revision are intended to be applicable to nuclear units identified by Docket Numbers 50-10, 50-237, 50-249, 50-254, 50-265, 50-295, 50-304, 50-373, 50-374, 50-454, 50-455, 50-456, and 50-457. The revision concerns general organizational changes.

We have evaluated the proposed changes against the acceptance criteria included in SRP Section 17.2 and find them acceptable with the following exception. Since the FSAR for the Byron/Braidwood Stations, Unit Nos. 1 & 2, Docket Nos. 50-454, 50-455, 50-456, and 50-457, is still under review and evaluation against the acceptance criteria included in SRP Section 17.2, Revision 1, "Quality Assurance During the Operations Phase," the topical report is not considered acceptable for the Byron/Braidwood Stations. Accordingly, as a result of our review and evaluation of the Byron/Braidwood Stations, it is expected that either the QA Topical or Section 17.0 of the FSAR will require additional information to meet our present requirements for this FSAR application. With the exception just noted, your revised topical report meets the criteria of Appendix B to 10 CFR Part 50 and is therefore acceptable for use.

Should regulatory criteria or regulations change such that our conclusions about this topical report are invalidated, we will notify you. You will be given the opportunity to revise and resubmit it should you so desire. As noted above, should you desire to reference this topical report in support of quality assurance programs for new nuclear plant projects, the basis of our evaluation will be the acceptance criteria included in SRP Sections 17.1 and 17.2, Revision 1. Appropriate changes will, therefore, be necessary.

Programmatic changes by CECo to this topical report are to be submitted to the NRC for review prior to implementation. Organizational changes are to be submitted no later than 30 days after announcement.

Please replace our letter of September 11, 1979 with this letter, renumber the report as CE-1-A, Revision 10, and submit 36 copies to the NRC. Your transmittal letter should identify the nuclear units to which the report is applicable, as noted above.

Should you have any questions regarding our review or if we can provide assistance, please feel free to contact me or Mr. William Belke at (301) 492-7741.

Sincerely,

Walter P. Haass

Walter P. Haass, Chief
Quality Assurance Branch
Division of Project Management

LISTING COVERING REVISION OF

TOPICAL REPORT CE-1

Listed below is Revision 10 dated 9/28/79 to the Commonwealth Edison Company Quality Assurance Program Topical Report CE-1:

Pages: 1-4, 1-5, 1-6, 1-7, 1-8, 1-10, 1-13, 1-21, 1-28, 1-29, 1-31, 1-32, 1-33, 1-35, 1-36, 1-37
2-7
4-4, 4-5
6-3
7-4
8-1, 8-2
13-3
18-1, 18-2

Approved By: W D Shewski
Manager of Quality Assurance

9/28/79

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with the Commission's regulations with regard to overall quality assurance program requirements. The Program shall apply to the quality assurance activities affecting the safety-related structures, systems and components. The Program is applicable to the maintenance, modification, operating and refueling quality assurance activities from the time the Operating License is issued to the end of the operating life of the items. Repairs are performed as maintenance activities and alterations as modifications. The Program covering operations, including quality control, are planned and implemented in accordance with procedures necessary to provide Commonwealth Edison Company adequate confidence that a safety-related structure, system or component performs satisfactorily in service.

B. Organizational Responsibilities for Major Activities

Design

Control of design quality is essentially a four-stage process. Designs originated by either the NSSS Supplier or Architect Engineer are subjected to internal review by the designer and an independent internal party (or parties). The NSSS Supplier and Architect Engineer designs are evaluated by each other as well as by personnel from one or more Edison departments. These steps constitute the primary design evaluation for all safety-related and ASME Section III items in the Station. Appropriate document distribution and control has been established to permit an effective effort in this area. Comments on designs resulting from these evaluations are presented in letter form, by telephone (with written follow-up) or in meetings with published minutes. Edison has final authority with respect to decision making on designs. | 2

Procurement

Procurement control and follow-up for NSSS components is established and maintained by the NSSS Supplier. Edison and the Architect Engineer evaluate the NSSS Supplier procurement specifications, and Edison audits and inspects the NSSS Supplier control measures. Procurement of and follow-up on non-NSSS components and services are directly controlled by Edison, based on the Architect Engineer specifications which have been evaluated by Edison. The Architect Engineer is used to assist in this effort, as Edison's agent, as requested by Edison.

Construction

Construction quality assurance is an Edison responsibility. Edison exercises managerial control of all site construction activities. The site Quality Assurance Group maintains close surveillance of on-site contractor's and other

associated construction quality assurance activities. The NSSS Supplier furnishes technical and Quality Control assistance for on-site activities relating to the NSSS. On-site contractors' quality assurance programs are independently evaluated by the Architect Engineer and Edison Quality Assurance.

Pre-service Testing

Pre-service testing, consisting of preoperational and start-up testing, is controlled by Edison. The Architect Engineer and the NSSS Supplier furnish rough draft test procedures to Edison. Based on these, a final draft is written by Edison. This final draft is subjected to internal Edison evaluation and evaluation by the Architect Engineer or the NSSS Supplier as appropriate. The tests are managed and performed by Edison with technical assistance from the NSSS Supplier as appropriate. The evaluation of the test results is performed by Edison and confirmed by independent internal Edison evaluations. Further independent evaluations by the Architect Engineer or the NSSS Supplier are performed as required by Edison.

Operations

Commonwealth's managerial and administrative control of the Quality Assurance Program for operating nuclear stations, as illustrated in Figures 1-0, 1-1, and 1-6, includes review and approval of procedures by the personnel described in this document.

Quality Procedures and revisions thereto for the Company Manual are concurred with by the principally involved departments. The Director of Quality Assurance (Operating) reporting to the Manager of Quality Assurance, verifies that the Quality Procedures for Operating contained in the Company Manual or Station Quality Procedures comply with the policy described in this document. Similarly, the Quality Assurance Supervisor (Maintenance) verifies that the Quality Procedures for maintenance, modifications, in-service inspection and Stores activities comply. The Manager of Quality Assurance directs the quality assurance activities covering operations and approves the Quality Assurance Procedures covering operating, maintenance, modifications, in-service inspection and Stores activities for use in the Station. 10

Station Procedures and instructions and revisions thereto for the Station Procedures Manual are reviewed and approved as provided in the Technical Specifications. The station Quality Assurance Engineer or Inspector, reporting to the Director of Quality Assurance (Operating) provides

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surveillance of the preparation and revision of the station operating procedures and instructions to assure compliance with the policies contained in the Quality Assurance Program. The Quality Assurance Engineers or Inspectors for maintenance, reporting to the Quality Assurance Supervisor (Maintenance), provide surveillance of the preparation and revision of procedures and instructions for maintenance, modifications, in-service inspections and Stores activities to assure compliance with the policy contained in the Quality Assurance Program. Temporary changes to procedures which do not change the intent of the original procedures, may be made with the concurrence of qualified individuals as described by Technical Specifications. Such temporary changes are subsequently reviewed, approved and authorized in a manner commensurate to that used for the original procedure. 10

Managerial and Administrative Controls

Lines of authority and responsibility for the Quality Assurance Program are documented and updated, as appropriate, in the form of organizational charts, functional descriptions of departmental responsibilities or descriptions of key quality assurance positions including those providing technical support or audit responsibility.

In general, the Quality Assurance Program provides that an activity is verified as being correctly performed, that Quality Assurance activities are performed independent of the individual or group directly responsible for performing a specific activity, and that quality assurance functions have sufficient authority and organizational freedom to identify quality problems; to initiate, recommend, or provide solutions; and to verify implementation of the solutions.

The responsibilities for implementation of the Quality Assurance Program are assigned to: Vice President (Engineering), Vice President (Licensing, Construction, Nuclear Engineering, Production and Environmental Affairs), Manager of Purchasing, Vice President (Divisions) and Manager of Quality Assurance. The organizations or personnel named herein and reporting to the Vice President (Engineering), Vice President (Licensing, Constructions, Nuclear Engineering, Production and Environmental Affairs), the Manager of Purchasing and Manager of Quality Assurance may assign to other organizations or personnel, the work of establishing and executing any part of the Quality Assurance Program under their cognizance, but the assigning organizations or personnel retain responsibility for such assignments. Figures 1-0, 1-1, and 1-6 illustrate the functional and administrative responsibilities of the major organizations and personnel participating in the Quality Assurance Program for operating nuclear stations. Dashed lines represent the functional responsibility for establishing and administrating the procedures and instructions. Solid lines represent responsibility for 10

implementing the procedures and instructions. Dotted lines represent audit responsibility for verifying compliance with the procedures and instructions independent of the person or group directly responsible for performing the activities. 10

The specific responsibilities for the Quality Assurance Program are described in the following paragraphs.

1.1 General

The President of Commonwealth Edison Company has overall responsibility for the Quality Assurance Program covering the design, construction and operation of the Company's nuclear generating stations. Authority and responsibility is assigned to the Manager of Quality Assurance for quality assurance with respect to design, procurement, construction and operation of the Company's nuclear power stations.

The Vice President (Engineering); Manager of Quality Assurance; Vice President (Licensing, Construction, Production, Nuclear Engineering, and Environmental Affairs); Vice President (Divisions) and Manager of Purchasing are responsible for implementation of the Quality Assurance Programs as described herein. 10

The Manager of Nuclear Operations, who reports to the Vice President (Licensing, Construction, Production, Nuclear Engineering, and Environmental Affairs) directs the activities of the Station Nuclear Engineering Department. The Station Nuclear Engineering Manager is responsible for design, test procedure, plant modifications and the baseline data for future in-service inspection for the Commonwealth Edison Company (CECo) nuclear power generating stations. The Vice President (Engineering) directs the testing activities of the Operational Analysis Department with the Operational Analysis Manager being responsible. 10

The Manager of Quality Assurance directs the quality assurance activities for the design, procurement, construction and operation of the Company's nuclear power facilities and interface activities with the Nuclear Regulatory Commission, Office of Inspection and Enforcement, Region III and the Authorized Inspection Agency. He or his designated alternate has been delegated responsibility and authority to stop unsatisfactory work and plant operation as well as further processing of unsatisfactory material during design, engineering

and construction of the plant, and during plant modification, maintenance and in-service inspection.

If conditions, which are adverse to quality and which require prompt action, are found by Quality personnel at the site or Station and required corrective measures can not be agreed upon, the Manager of Quality Assurance or his designated alternate, will be notified promptly.

The Director of Quality Assurance (Engineering-Construction), the Director of Quality Assurance (Operating) and the Quality Assurance Supervisor (Maintenance) report directly to the Manager of Quality Assurance. The Director of Quality Assurance (Engineering-Construction) has responsibility for administering design, procurement and construction quality assurance activities; the Director of Quality Assurance (Operating) has responsibility for administering operating quality assurance activities; and Quality Assurance Supervisor (Maintenance) has responsibility for quality assurance activities covering maintenance, modification, in-service inspection and Stores activities. They have authority and organizational freedom to identify problems and to initiate, recommend or provide solutions. The Quality Assurance organization is independent of the groups and individuals directly responsible for performing specific activities to which such quality assurance is applicable. 10 10

The qualification requirements for the position of Manager of Quality Assurance includes having a broad background and working knowledge of nuclear plant engineering, construction and operating activities within Commonwealth Edison Company as well as functional interfaces with working organizations outside the company plus having executive capabilities to achieve goals and objectives in concert with company policies. Educational requirements include, as a minimum, a baccalaureate degree or equivalent in engineering or an equivalent technical discipline.

Job requirements for the positions of the Directors of Quality Assurance and Quality Assurance Supervisor (Maintenance) include having a broad background and working knowledge of engineering, construction and operating activities within Commonwealth Edison Company as well as having a knowledge of codes and standards applicable to power plant design, construction and operation and quality assurance principles. They also shall have supervisor and management qualities and capabilities. Educational requirements shall include a baccalaureate degree or equivalent in engineering or an equivalent technical discipline. 10

The Vice President (Licensing, Construction, Production, Nuclear Engineering and Environmental Affairs) directs the activities of departments responsible for licensing, construction, construction testing, plant operations, nuclear engineering and environmental affairs. 10 10

In this capacity he is responsible for the activities of departments and divisions concerned with the operations, maintenance and nuclear engineering of the Company's generating facilities as well as control over the bulk power transmission system. The departments and divisions and the person responsible for activity within each are as follows: 10

Production Services Department -
Manager Production Services

System Power Supply Department -
System Power Supply Manager 10

Production, Fossil Division -
Division Manager-Fossil Stations

Station Construction Department -
Manager of Station Construction

Station Nuclear Engineering, Environmental Affairs, Nuclear Licensing and Nuclear Fuel Services Departments, and Production Nuclear Division -
Manager of Nuclear Operations 10

The Vice President (Divisions) is responsible for the activities of the seven Operating Divisions and the Operating Manager. These Divisions are assigned responsibility for those activities concerned with distribution of power as well as service to customers and public relations within their respective geographical areas including operation and maintenance and inspection of electrical transmission and distribution facilities. The Operating Manager's responsibility includes the Transmission and Distribution Construction Department which has functional responsibility and control for Division Substation Construction activities.

A Division Vice President is responsible for each Division. A Division Operating Manager reports to the Division Vice President. The Division Operating Manager is responsible for Division Substation Construction and Division Operational Analysis activities.

Commonwealth Edison assigns to the Manager of Purchasing the responsibility for the procurement of: services, spare parts, materials and equipment in accordance with the purchase requisition and contract requirements and for obtaining the required quality assurance documentation for such items. Corresponding responsibility for the procurement of nuclear fuel (including reprocessing) is assigned to the Manager of Fuels & Budgets. 10

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1.2 Organization

The Commonwealth Edison Company organization, as related to Quality Assurance, is shown in Figures 1-0 and 1-1. Departmental and divisional organizations showing the Quality Assurance function is shown in Figures 1-2, 1-2.1, 1-3 and 1-5.

1.3 Scope

Specific responsibilities for implementation of the Quality Assurance Program are assigned to the Commonwealth Edison Company organizational groups as outlined in Paragraphs 1.4 through 1.6.

The scope of responsibilities involved in a nuclear project is divided into four Phases.

Phase I - Definitions of system design and quality requirements and acceptance of the quality of design.

Phase II - Verification that design and quality requirements have been met during construction.

Phase III - Baseline in-service inspection; preoperational testing.

Phase IV - Operation, in-service inspection, maintenance, repair, refueling and station modifications.

1.4 Engineering and Construction Responsibilities

1.4.1 Station Nuclear Engineering Department

The Station Nuclear Engineering Department is organized as shown in Figure 1-3. This department is responsible for Phases I and II and assists other departments for all Phases.

1.4.1.1 For Phases I and II, the Station Nuclear Engineering Department delegates and also coordinates various segments of these activities with the Station Construction Department, Nuclear Licensing Department, Operational Analysis Department and Production, Nuclear Division. For

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Phase IV, Station modifications design activity, the Station Nuclear Engineering Department has responsibility for design and schedules and for obtaining assistance from the Production Nuclear Division.

1.4.1.2 **The Station Nuclear Engineering Manager reports to the Manager of Nuclear Operations. He assigns specific nuclear generating station and project responsibility to Section** Engineers. The Section Engineers have overall engineering responsibility for such projects and, specifically, supervises the electrical, mechanical, structural and nuclear activities during plant design and construction and of modifications during plant operation. A Project Engineer assigned to the Section Engineer for a nuclear generating station or each project, directs and coordinates the associated activities during design, construction, and as requested, during subsequent station modifications and maintenance. The Project Engineer is responsible to the Section Engineer for the following responsibilities: 10

a. Review and control the scope of work involving the electrical, mechanical, structural and instrumentation, and control designs of the NSSS vendor and Architect Engineer to verify that applicable Safety Analysis Report (SAR), regulatory requirements and design bases are properly translated into specifications, drawings, procedures and instructions.

b. Review and accept the specifications, drawings, and scope for electrical, mechanical and structural material, equipment and erection work, prepared by the Architect Engineer and NSSS vendor, to verify inclusion of inspection, testing and acceptance criteria.

c. Analyze bids, make purchase recommendations, control expenditures and assure that necessary quality requirements are included in purchase orders and contracts.

1.4.3.1 The Manager of Station Construction assigns a Project Superintendent or Engineer to a construction site or Station who has the following responsibilities: 10

a. Advisor to engineering departments for design suitability from a construction viewpoint.

b. Coordinate requests for field revisions.

c. Receipt of items including furnishing necessary storage facilities.

d. Assist Station Nuclear Engineering Department in development of overall schedule.

e. Verify conformance and completeness of contractor's installation or erection to specification requirements.

f. Supervise and approve mechanical and structural construction tests.

g. Coordinate and provide assistance for electrical construction tests.

h. Coordinate preoperational tests.

The Manager of Station Construction is assigned ASME Section III, Division Constructor responsibilities and has the responsibility for maintaining a Level III person on Staff responsible for personnel development and qualification and for the performance to the requirements for concrete inspection as required by rules established in Section III, Division 2 of the ASME Code.

1.4.3.2 The Station Construction Project Superintendent or Engineer is responsible for coordinating and directing Phase II of the Program, activities to assure procurement requirements are fulfilled by suppliers and construction at the site. The Station Construction Department receives assistance from the Station Nuclear Engineering, Station Electrical Engineering and Operational Analysis Departments. The Station Construction Department provides construction assistance and expertise to the total program including plant modifications under Phase IV.

1.4.4 Operational Analysis Department

The Operational Analysis Department is organized as shown in Figure 1-5.

1.4.4.1 The Operational Analysis Manager has the following responsibilities:

a. Participate in review of design specifications to verify proper selection of materials and the inclusion of adequate electrical testing requirements.

b. Prepare procedures and conduct electrical construction tests as directed.

c. Participate in the preparation and review of preoperational and start-up test procedures, as directed.

d. Participate in and coordinate preoperational and start-up testing, as directed.

e. Maintain SNT-TC-1A Level III person on Staff responsible for personnel and procedure development and qualification to Code requirements for nondestructive examination.

f. Maintain Commonwealth Edison Company off-site testing facilities and equipment required to fulfill the Department responsibilities.

g. Provide necessary assistance and expertise for baseline and in-service inspection.

h. Provide specialized testing services and equipment analysis such as instrument and equipment calibrations (traceable to national standards) and evaluation of materials.

1.4.4.2 The Operational Analysis Department provides specialized field testing services through its technical staff specialists, standardizing and calibration services, retention of related quality assurance documentation and materials expertise. Also, the Department is responsible for inspection and proof testing of electrical generation, transmission and distribution equipment. The Company Level III NDE person is assigned to this Department.

1.4.4.3 The Quality Assurance Coordinator assigned to the Operational Analysis Department has the responsibility to assure that the following quality assurance activities are performed:

Production Divisions - Fossil and Nuclear. The Division Manager in charge of each Division is responsible for the safe and reliable operation and maintenance of the plant assigned to his division.

The Division Manager-Nuclear Stations reports to the Manager of Nuclear Operations and has line responsibility for the administration, management and direction of all Production Department activities at nuclear stations. He is responsible for implementation of the Quality Procedures for the Quality Assurance Program and for development of station procedures for the Station Procedures Manual. 10

He is also responsible for obtaining and authorizing the use of services, or required liaison or interface with, other Commonwealth Edison Company departments such as: Accounting, Industrial and Public Relations, Purchasing, Engineering, Construction and Operational Analysis. He is responsible for approval of requisitions for the procurement of services from vendors and contractors. He provides liaison between the Regional Nuclear Regulatory Commission's Director of the Office of Inspection and Enforcement and the Office of the Production Department.

He is responsible, through the Station Superintendent, for the management of each assigned power station. This includes all activities such as, operation, maintenance and refueling, and authorization of modifications performed at the Station, compliance with all regulations and licenses, personnel selections, training and related activities. He assigns responsibility for preparation and implementation of the Station Procedures Manual to the Station Superintendent including the Maintenance Procedures. 10

The Division Manager-Nuclear Stations coordinates the planning of each assigned station's activities with the activities of other plants on the Commonwealth Edison Company system and with the System Power Supply Manager. The

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coordinated planning involves scheduled outages, system electrical demands and Commonwealth Edison Company policy and rules. He maintains contacts with similar nuclear stations of other companies and transmits information from them regarding operating problems to Commonwealth Edison's nuclear stations.

1.5.1.2 Station Superintendent

Each nuclear generating station is managed by a Station Superintendent who is responsible for direct management of the station including industrial relations, planning, coordination, direction of the operation, maintenance, refueling and technical activities. The Station Superintendent is responsible for Phase III and IV and compliance with the Station's NRC Operating License, government regulations, ASME Code requirements and the Company Quality Assurance Program. He also authorizes the use of procedures contained in the Station Procedure Manual, and is responsible for final approval and distribution of station reports. The Station Superintendent authorizes all modifications to the Station after the issuance of an Operating License and completion of preoperational testing. He forwards requests for modifications to the Commonwealth Station Nuclear Engineering Department. Repair and equipment maintenance needing technical review for substitution of equipment are reviewed by the Station Technical Staff and completed as maintenance activities under station management. He supervises the Station's on-site review function as provided in the Administrative Section 6.0 of the Technical Specifications. 2

During periods when the Station Superintendent is unavailable, he shall designate this responsibility to an established alternate who satisfies the ANSI N18.1 experience requirements for plant manager.

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1.5.3 Operations Manager - Nuclear Stations

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The Operations Manager's Staff is shown in Figure 1-6. The Operations Manager reports to the Division Manager Nuclear Stations and has functional responsibility for operation of nuclear stations in a safe and efficient manner and in accordance with Company procedures, NRC Technical Specifications and governmental regulations. His responsibilities include:

a. Providing direction to the Operating Assistant Superintendent regarding day-to-day operation of station units. 9

b. Coordinating unit outages with Power Supply.

c. Reviewing station operating performance for adherence to procedures, technical specifications and other governmental regulations.

d. Reviewing the results of personnel performance investigations and follow-up on corrective actions.

e. Participating in personnel performance investigations as assigned.

f. Participating in station AIR meetings and follow-up as appropriate on corrective actions.

g. Reviewing license event reports and deviation reports for trends, effects on other units and corrective action.

h. Communicating common equipment and system problems among stations in a timely manner.

i. Reviewing station response to NRC inspections and Quality Assurance audits for trends, corrective action, and follow-up on completion of commitments.

j. Initiating and coordinating GSEP drills.

k. Coordinating the implementation of nuclear security regulations.

1.5.4 Technical Services Manager - Nuclear Stations

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The Technical Services Manager's Staff is shown in Figure 1-6. The Technical Services Manager reports to the Division Manager Nuclear Stations and has functional reponsibility for the Station Technical Staff organizations and work assignments. He has responsibility for career planning of technical

personnel assigned to the stations, providing needed technical support for the stations and developing operating strategies to improve thermal performance and availability.

1.5.5 System Power Supply Department

System Power Supply is shown in Figure 1-6. The System Power Supply Manager is responsible for managing the bulk power system with the objectives of safe operation, reliable service and efficient utilization of Company-owned production facilities.

1.5.5.1 The Manager System Power Supply has the following responsibilities:

a. Scheduling power generation.

b. Purchase and sale of power from and to other utilities.

c. Coordinating the operation of the Commonwealth system with the Mid-America Inter-Pool Network and other interconnected utilities.

d. Final scheduling of outages for generating stations for corrective and preventative maintenance.

1.5.6 Production Services Department

The Production Services Department is shown in Figure 1-6. The Production Services Manager is responsible for providing functional direction of Production Stores activities (Phase IV), training activities and the Total Job Management Program. 10

1.5.6.1 The Production Services Manager has the following maintenance Production Stores activities responsibilities: 10

a. Control of spare parts inventory;

b. Coordinating procurement of spare parts and materials and assuring that technical and quality assurance requirements are specified in procurement documents; and

c. Liaison with company stations and departments, manufacturers and other utilities on spare parts matters.

The Production Services maintenance Production Stores staff, in particular, review station purchase requisitions for safety and ASME Code related spare parts, material and equipment to assure that requirements for Quality Assurance are specified as required and that Stores Code Numbers are assigned to spare parts to be stored at the Station. 10

1.5.6.2 The Production Services training staff coordinates training activities for Commonwealth's nuclear generating stations. They coordinate the preparation of training materials, surveillance of on-the-job instruction and the scheduling of simulator training and other off-site training.

1.6 Purchasing Responsibilities

1.6.1 Manager of Fuel & Budgets

The Manager of Fuel & Budgets is responsible for Commonwealth's procurement of nuclear fuel to specifications furnished by the Station Nuclear Engineering Department. He reports to the Executive Vice President on matters involving such fuel. 10

1.6.2 Station Stores Supervisor 10

The Station Storekeeper reports to the Maintenance Assistant Superintendent. The Station Stores Supervisor receives function direction from the Superintendent Stores and Material Control under the Manager of Purchasing for station storekeeping activities. He is responsible for the administration of the station storeroom including receiving, inspection, storing and issuing spare parts, materials and equipment. His responsibility includes verifying the receipt of quality assurance documents specified in the procurement documents for spare parts, material and equipment directed to him, maintaining inventory records of spare parts, material and equipment and complying with special handling and storing instructions. 10

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1.7 Division Operations Responsibilities

1.7.1 Substation Construction Department

The Substation Construction Department performs electrical modifications at nuclear generating stations as directed and in accordance with the provision of the Quality Assurance Manual. A Substation Construction Procedures Manual is used to control specific processes and procedures unique to electrical construction and installation.

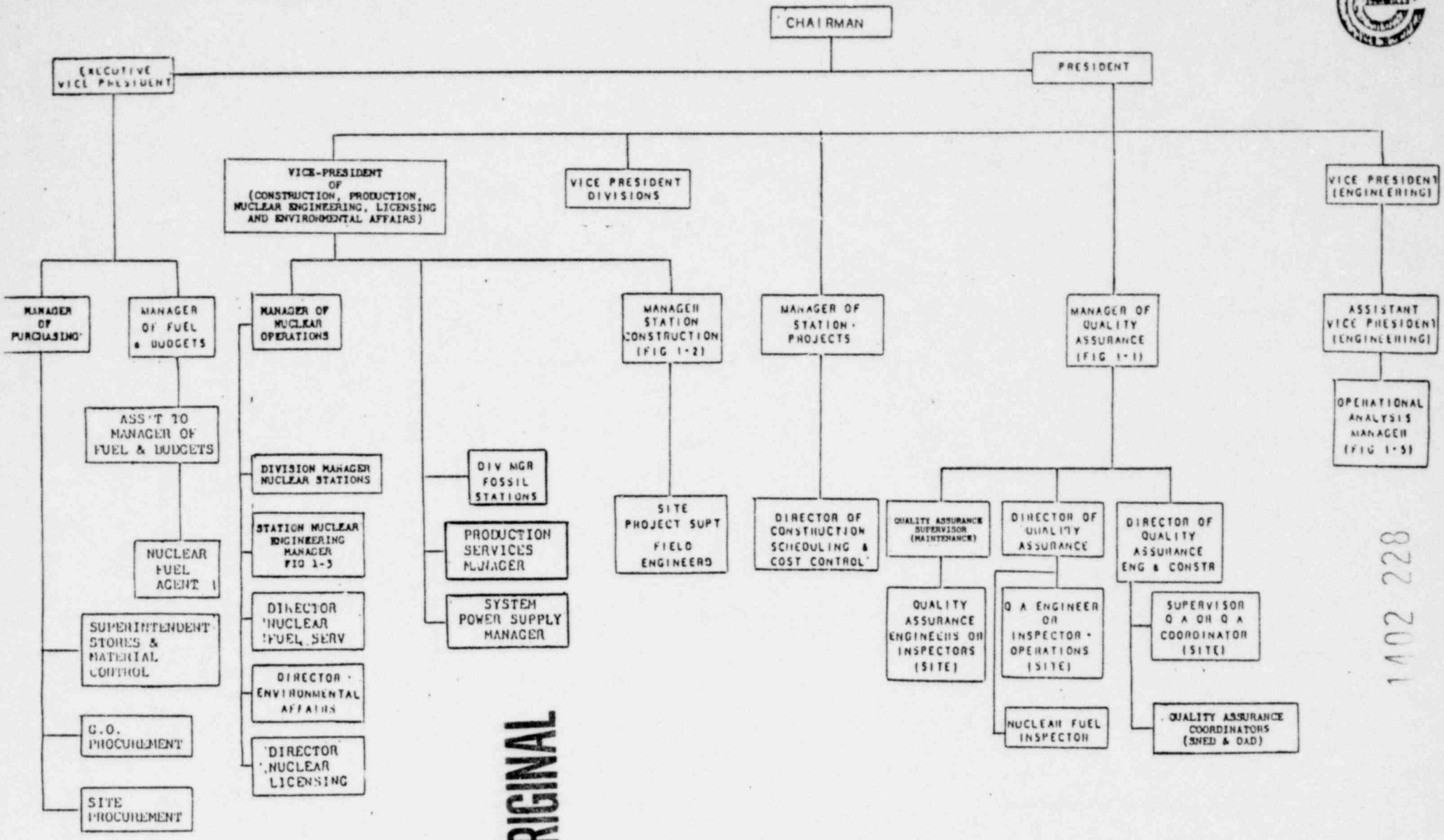

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FIGURE 1-0
ORGANIZATION CHART
RELATED TO
QUALITY ASSURANCE

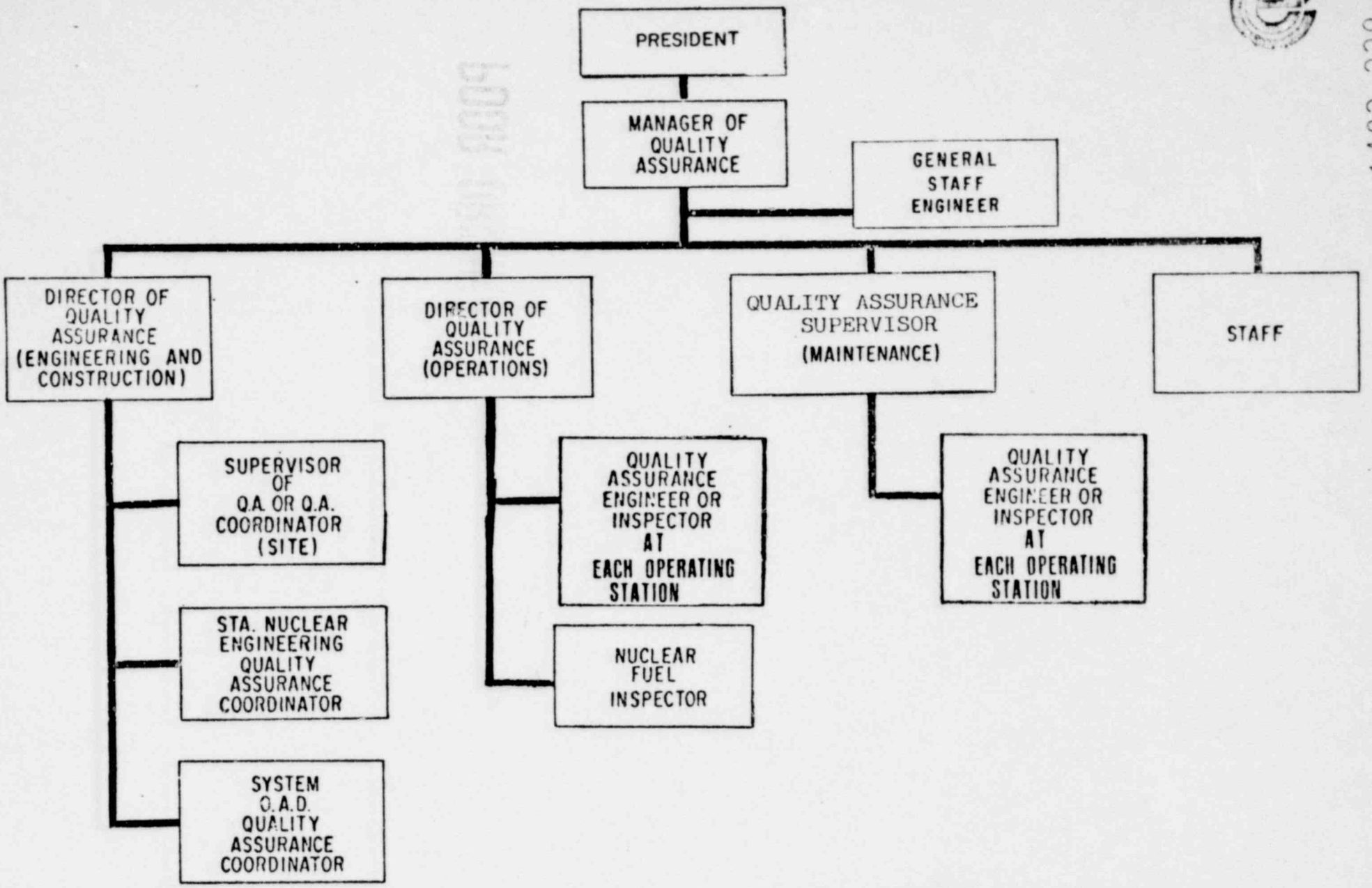

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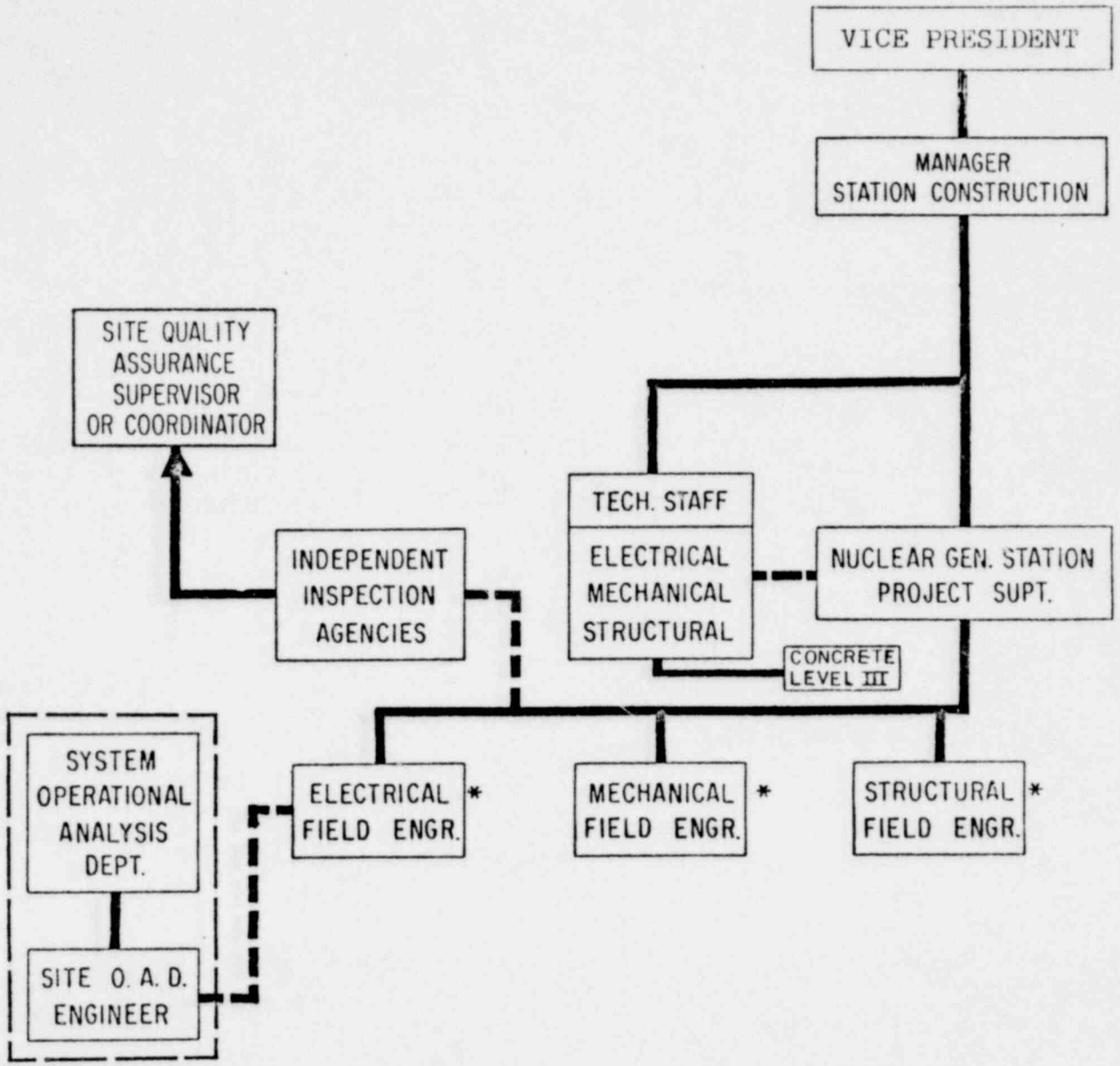
FIGURE 1-1
ORGANIZATION CHART
QUALITY ASSURANCE



*Generally Headed by Supervising or Lead Type individuals.

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FIGURE 1-2
STATION CONSTRUCTION
DEPARTMENT

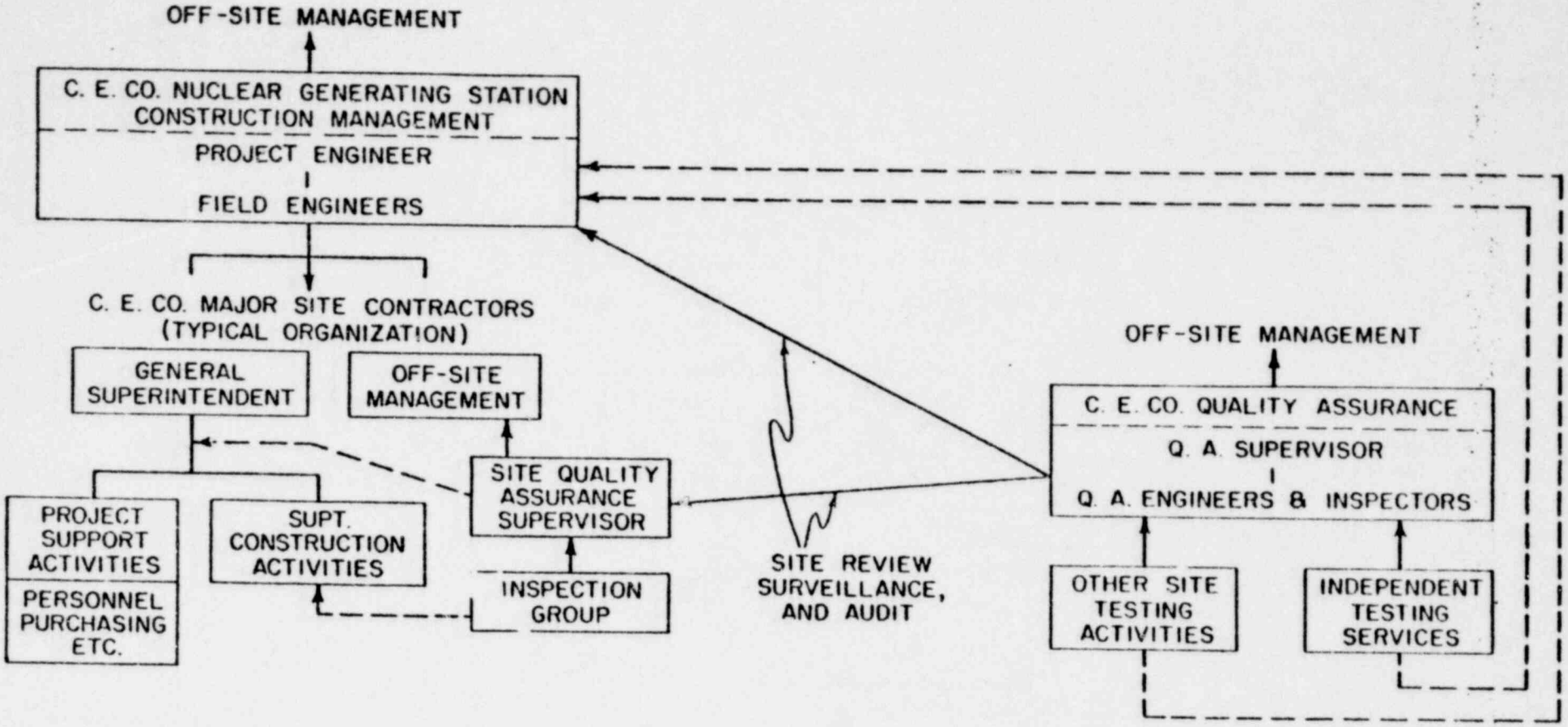

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FIGURE 1-2.1
C. E. CO. NUCLEAR GENERATING STATION
SITE ORGANIZATION
INTERFACE RELATIONSHIPS

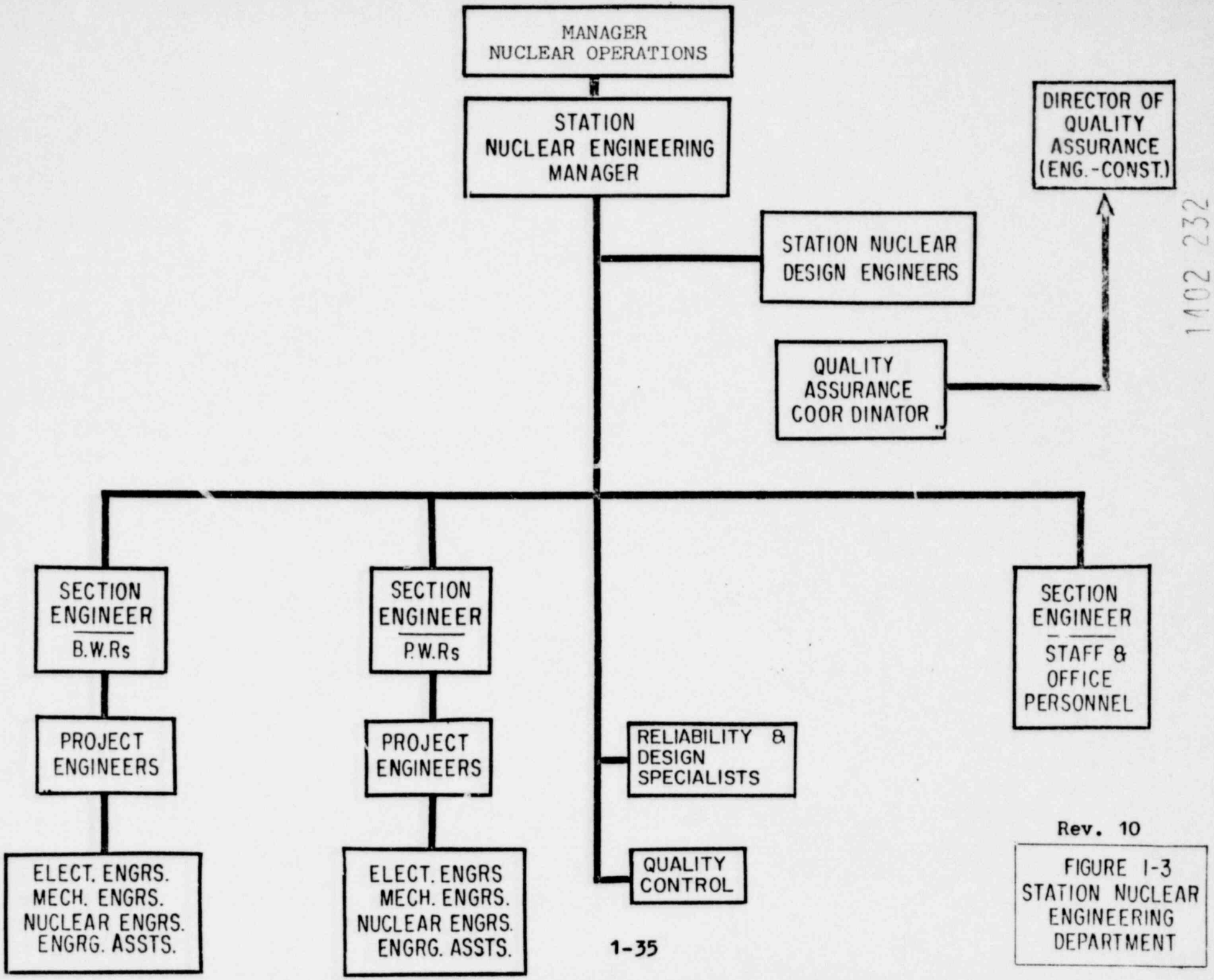

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FIGURE 1-3
STATION NUCLEAR
ENGINEERING
DEPARTMENT

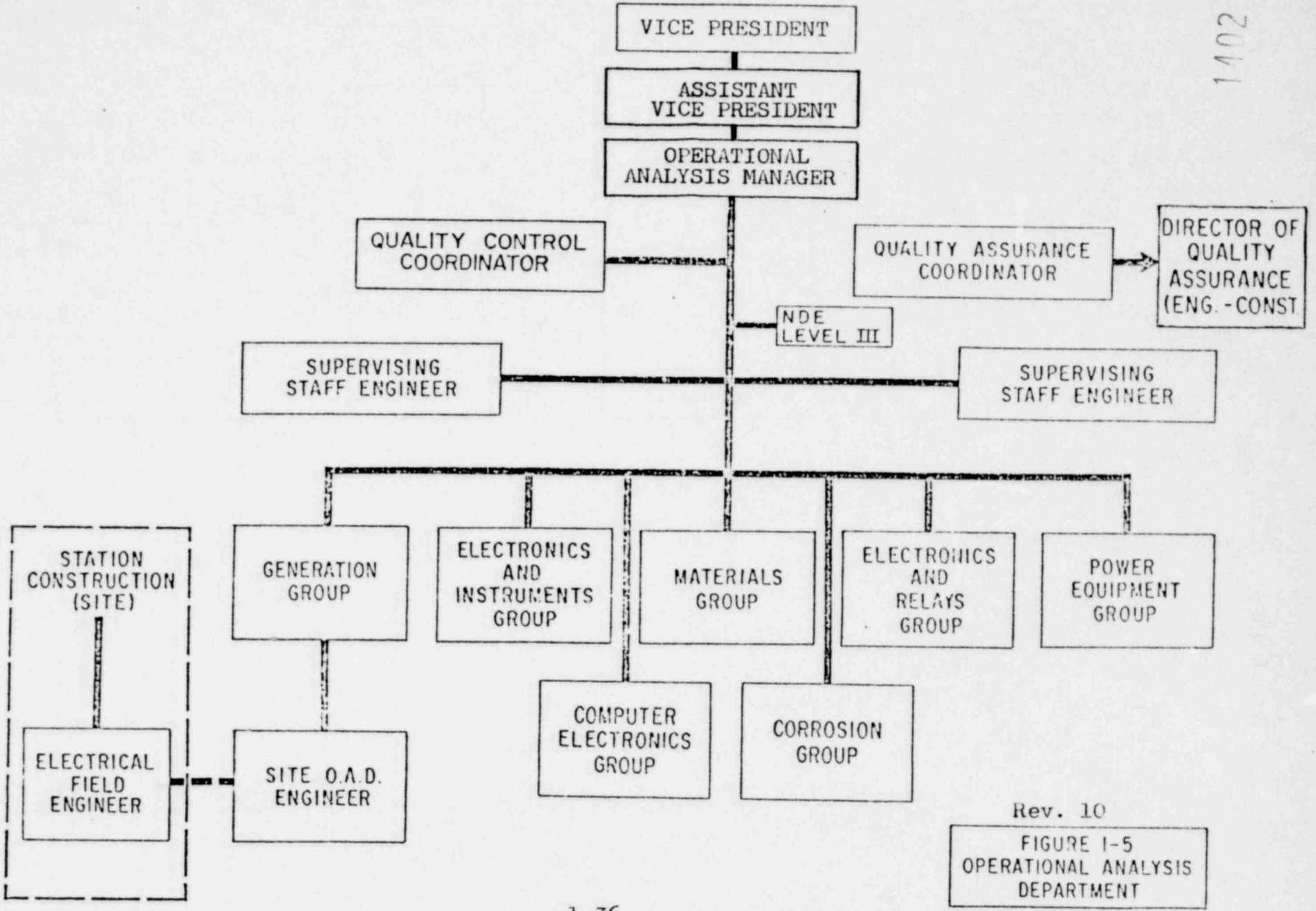

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FIGURE 1-5
OPERATIONAL ANALYSIS DEPARTMENT

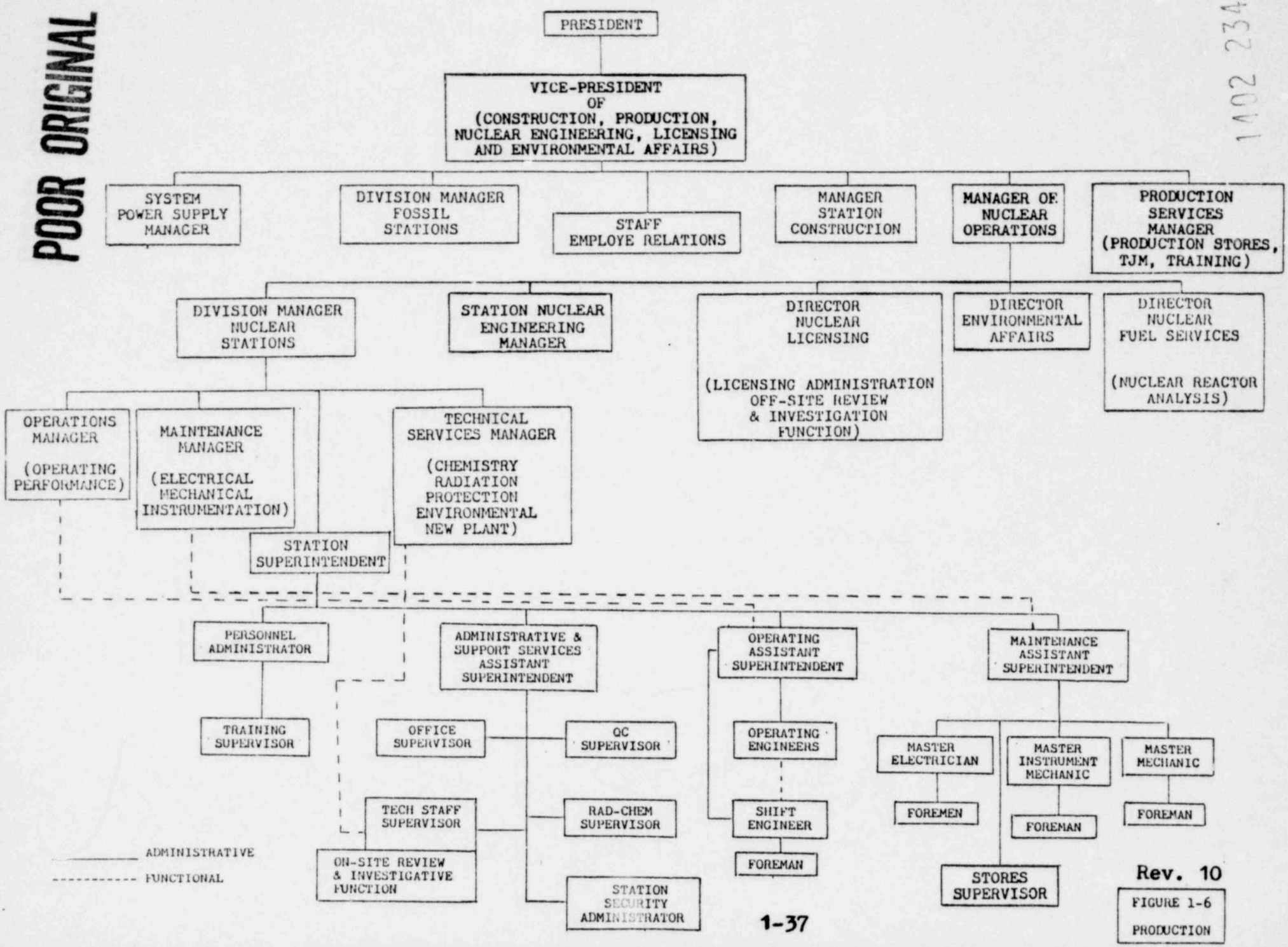

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FIGURE 1-6

PRODUCTION

Authorized Nuclear Inspector prior to issuance. Also, concurredly, a copy of the updated Corporate Quality Assurance Manual shall be made available to the Authorized Nuclear Inspector at stations where Code work is being done. Quality Assurance Procedures involving engineering, construction, operating and maintenance, modification, in-service inspection and Stores activities, and revisions thereto, are signed by the Head of the principally involved department and the responsible Director of Quality Assurance or Quality Assurance Supervisor (Maintenance) and approved by the Manager of Quality Assurance. 10

Approval of the Quality Assurance Program Manual Indexes indicates approval of respective changes to the individual pages in the Corporate Quality Assurance Manual. Section 2 and 5 of the Quality Procedures provide the procedures for implementing this section of the Quality Requirements.

requisition and/or letter will incorporate, by reference, those documents such as specifications, drawings, proposals, supplementary proposals, etc., and any conditions of award which form the basis for the evaluation and award. Edison Purchasing, based on the recommendation letter, its own evaluation and the purchase requisition, shall conduct necessary negotiations and clarifications and make the award to a bidder on the Approved Bidders' List. Any changes evolving from the procurement activities involving technical or quality assurance matters, either for the original purchase or subsequent change orders, shall be approved by the originator of the purchase or change order requisition.

The Station Nuclear Engineering Manager will assign authority for evaluation of the vendor quality assurance program, prior to final award of the contract or purchase order, to the Project Engineer who will be assisted in such evaluation by the Director of Quality Assurance (Engineering-Construction) and the Architect Engineer. Quality Assurance evaluates all such vendor quality assurance programs. The Quality Assurance Coordinator assigned to the Station Nuclear Engineering Department is responsible for assuring that the evaluation is carried out and for auditing the manuals of bidders being recommended as acceptable for award as to resolution of comments received by Engineering from Quality Assurance and others plus evaluation by Engineering. As part of the vendor quality assurance program evaluation, the Quality Assurance Coordinator will assure all vendor quality assurance program deficiencies are resolved. Concurrence by Quality Assurance shall be required. If the vendor program deficiencies are minor and/or may be corrected by specific procedures for the work to be done, the resolution may follow an award and shall be a condition of the award.

For procurements performed at certain construction sites by the Purchasing Department satellite organization involving safety and Code-related items, the preparation of the necessary procurement documents is the responsibility of the Station Construction Department. Procurements by the site Purchasing organization are under the control and management of the General Office Purchasing Department and associated procurement documentation packages are formulated from specifications and drawings issued and approved by Engineering. The cognizant Field Engineer prepares the suggested list of prospective bidders for each procurement package from the Approved Bidders' List with direction from the site Purchasing Department Buyers. The final list of prospective bidders and procurement bid package is approved by the Station Construction Project Superintendent or Engineer or his designated alternate. In addition, such procurement bid packages involving the purchase 2

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of ASME Code and safety-related materials and items are required to be reviewed and approved by the site Quality Assurance Supervisor or Coordinator, or designated alternate verifying that the necessary technical and Quality Assurance requirements are included and the proposed bidders are acceptable.

The bids are evaluated by Station Construction and an award recommendation plus a purchase requisition is prepared and transmitted to Purchasing via the site Quality Assurance Supervisor or Coordinator or his designated alternate, for final review and approval indication. Site Purchasing, based on the recommendation of the Station Construction Department, its own evaluation and the purchase requisition conduct necessary negotiations and clarifications and make the award to a bidder on the Approved Bidders' List. Any changes evolving from the procurement activities involving technical or quality assurance matters, either for the original purchase or subsequent change orders, shall be approved by the originator of the purchase or change order requisitions as well as Quality Assurance.

The Manager of Fuel & Budgets is responsible for the preparation of nuclear fuel bid documents, for the evaluation of bids received and for the purchase of nuclear fuel. The Nuclear Fuel Fabrication Inspector provides quality assurance assistance. The Station Nuclear Engineering Manager and the Director Nuclear Fuel Services furnish technical assistance to the Nuclear Fuel Agent during the preparation of bid documents and the evaluation of bids. 10

When the Maintenance Assistant Superintendent or Technical Staff Supervisor orders spare parts, material and equipment for safety-related items to applicable engineering requirements, they specify the quality assurance documentation requirements equivalent to or better than the original installation. When spare parts, material and equipment are ordered by part number or nomenclature without special engineering requirements being specified, appropriate statements are included in the purchase order to assure quality equivalent to original equipment. The Quality Control Supervisor shall review and verify that quality assurance, specification, ASME Code and other applicable codes and standards requirements and special requirements are included in the Request for Purchase.

The procurement documents are reviewed and processed by the Production Stores Group, of the Production Services Department. Coded part numbers are assigned to spare parts. The Manager-Production Services and the Manager of Quality Assurance, or their designees, review and approve that the quality assurance requirements for documentation of spare parts, welding materials, material and equipment as outlined above are included in the procurement request documents and 10 10

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that the items are ordered from the original equipment supplier or an evaluated and approved alternate supplier.

The bid package and the resulting contracts or purchase order will clearly reference applicable revision dates of appropriate drawings and specifications for the item or service being procured. Appropriate revisions of ANSI, ASME or other applicable codes and/or standards will be considered a part of the design requirements and be referenced in the bid package, contract or purchase order.

The bid package and resulting contract or purchase order will contain the requirements for inspection, testing and inspection documentation.

Commonwealth Edison Company, its contractors, subcontractors and vendors will be responsible for their respective programs by which an appropriate review and audit will determine that the requirements of this Section have been met.

Procurement documents will identify which records indicative of quality will be transmitted to Commonwealth Edison and the method of dispositioning those which the vendor retains.

The bid package and resulting contract or purchase order will contain, as applicable, the requirement for the contractor to have and implement a quality assurance program for purchased materials, equipment and services to an extent consistent with their importance to safety and will state the controls which will exist between the purchaser and seller in requesting and accepting changes under the purchase order or contract.

Procurement of spare parts or replacement items will be subject to controls at least equivalent to those used for the original equipment.

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The Station Construction Department or the Nuclear Division Maintenance Department, whichever has assigned a representative with prime responsibility for new plant construction or modification work, shall be responsible for collecting and retaining the inspection and test documentation during construction and installation of assigned plant modifications and for transferring such documentation to, or within, the Station for review and acceptance and permanent filing. 10

7. CONTROL OF PURCHASED MATERIAL, EQUIPMENT AND SERVICES

7.1 General

The control of the quality of purchased material, equipment and services is achieved through the evaluation of vendors, surveillance of their operations and required source inspection, documentation, receiving inspection and retention of quality records. Both Edison and the NSSS Supplier have direct procurement functions for the Station. The Architect Engineer offers recommendations to Edison on vendor selection and reviews vendor efforts as directed by Edison. Edison will inspect and audit the NSSS Supplier control of purchased material, equipment and services. Edison has the responsibility for on-site control of Edison and the NSSS Supplier purchased material, equipment and services.

Contractors and suppliers furnishing material, equipment and services to CECo for items within the jurisdiction of this Quality Assurance Program will be selected on the basis of demonstrated capability to provide a product, process or service in accordance with the design specifications and contract provisions.

The purpose of this Section is to define the quality system elements and related policies which assure the quality of purchased material, equipment and services through the evaluation of vendors, surveillance of their operations, required source inspection, documentation, receiving inspection and retention of quality records.

The Station Nuclear Engineering Department Project Engineer in conjunction with Quality Assurance will require a Quality Assurance Program in accordance with ANSI N45.2 or ASME Boiler and Pressure Code Section III from vendors or contractors consistent with the importance of the procurement to station safety and operation and the requirements of ASME Section III and 10CFR50 Appendix B. In addition, Edison's procurement documents will provide notification to vendors and contractors that the provisions of 10CFR Part 21 apply. | 2

Control and approval of subcontractors quality assurance programs, procedures and personnel qualification, are the responsibility of the specific contractor involved. Such contractor actions are to be documented and will be subject to audit by CECo.

7.2 Evaluation of Vendors

An evaluation of vendor capability will be required for ASME Section III and safety-related items. Where valid records of vendor capability and quality performance are not available to CECo, a survey of the supplier's facilities, capabilities and quality assurance system will be made by CECo or its designated representative. For items requiring ASME Code conformance, vendors must be able to meet ASME Code requirements.

The Station Nuclear Engineering Department Quality Assurance Coordinator will be responsible for assuring that vendor or contractor Quality Assurance Program evaluations are carried out. The Purchasing Department will maintain the Approved Bidders' List for contractors and suppliers of ASME and safety-realted items. Addition of vendors to the Approved Bidders' List shall only be made upon approval by Station Nuclear Engineering Manager and the Manager of Quality Assurance, or their designees, as to meeting technical and quality assurance requirements.

Section 9.0 of this report, "Control of Special Processes," establishes the evaluation and assessment of certain process and inspection capabilities of the vendor such as welding, heat treatment, and nondestructive examination.

Past performance of a contractor/vendor will be considered during procurement activities by CECo. Prior to contract or purchase order award, the bidder's capability and quality performance will be reviewed relative to the product, process or service being procured. If records are inadequate, a survey of the bidder's facilities prior to award may be required. Such surveys will include, as applicable, review of facilities, organization, quality assurance program and experience, existing controls, knowledge of special processes, possession of a current ASME Certificate of Authorization, and an understanding of, and a willingness to meet contractor or purchase order requirements.

7.3 Surveillance of Vendor Operations

Source surveillance will be carried out through notification points established as a condition of procurement of safety-related or ASME Section III items. Special consideration will be given for surveillance during manufacture when one of the following is involved:

a. Determination of conformance of the item to purchase order requirements at any other point would require uneconomic disassembly or destructive testing.

b. Special instruments, gauges, or facilities required for inspection or test are more readily available at source and would be uneconomic to reproduce at the job site.

c. A receiving inspection would destroy or require replacement of special preservation and packing.

d. Quality Controls and inspections are integrated into production methods, and inspection at the suppliers plant is necessary to economically verify test reports, inspection records, certifications or other evidence of quality.

Source surveillance by Commonwealth Edison Company or its agents will not nullify the vendor's responsibilities for maintaining a quality control organization delivering items conforming to procurement requirements. Unless otherwise specified, acceptance by Commonwealth Edison Company will be at the nuclear generating station site in accordance with the terms of the contract. The administration, surveillance and inspection of off-site equipment and material vendors will be the responsibility of the Station Construction Department with final approval of inspection acceptance reports being vested in the Quality Assurance Department.

7.4 Receiving Inspection

Materials and articles received from vendors will be inspected upon receipt to assure physical integrity and identity plus documentation compliance with the procurement requirements. For items not source inspected, specific receipt inspection measures such as material and dimensional checks against approved drawings and specifications and assurance that ASME Code Data Reports are received will be performed to verify compliance to procurement requirements. Evidence that material or equipment conforms to procurement requirements must be documented, retained and available at the site prior to use or installation. Part of this evidence

shall be in the form of acceptable documentation such as Certified Material Test Reports, Pressure Test Reports, Certificates of Conformance, etc. Documentation requirements will be delineated in the individual equipment specifications. The Station Construction Materials Receiving Coordinator or designee will be responsible for assuring that receiving inspection is completed where the Station Construction Department is responsible for the work; receipt acceptance approval will be by Quality Assurance or its designated agent. Where ASME Section III components and safety-related materials and equipment are received by the Station Stores Supervisor, Station Quality Control will be responsible for receiving inspection and the Quality Assurance Engineer or Inspector for Maintenance shall assure through audit and surveillance that the receiving inspection is complete and traceability is maintained. ASME Code material transferred from Stores or another CECo Station shall meet the requirements specified for the designated installation. Nonconforming equipment will be controlled. 10

7.5 Supplier Audit

Vendors of safety-related and/or ASME Section III items will be subjected to survey, audit or surveillance of their quality assurance system by CECo, or its agents, at intervals consistent with the importance to safety, complexity, and the quantity of the product or services being furnished in accordance with approved agenda and checklists to assure that the necessary manufacturing processes are being utilized and that quality controls are being maintained.

7.6 Spare Parts

Spare parts will be purchased to original or better design requirements. The applicable quality assurance requirements will be included in the procurement documents.

Spare parts and equipment from vendors will require documentation by equipment or part number for identification and traceability. Documentation for material will be in accordance with procurement order requirements. When the procurement order for ASME Section III components and safety-related spare parts, material, and equipment includes a specification or drawings, documentation will be received from the vendor which verifies conformance with those requirements.

The Station Stores Supervisor and Station Quality Control Supervisor are responsible for assuring that documentation for spare parts and equipment has been included as part of the shipment. The documentation for the purchased material, 10

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equipment, and/or services, after being reviewed and accepted by the Quality Control Supervisor will be retained at the Station. 9

When required documentation is lacking for safety-related and/or ASME Section III components or spare parts, the Technical Staff Supervisor will verify that appropriate documentation is obtained or that suitable inspection and testing is performed to verify conformance to procurement requirements and that such items are treated as nonconformances. Receipt inspection of spare parts and equipment purchased to ASME Section III and safety-related requirements shall be accepted by the Station Quality Assurance Engineer or Inspector for Maintenance.

8. IDENTIFICATION AND CONTROL OF MATERIALS, PARTS AND COMPONENTS

A system of controls will be utilized to prevent the use of nonconforming items or items which have not received the required inspections and tests. Materials, parts, components, and equipment will have their identity marked on the item or on tags and records traceable to the item. Identification assigned to materials, parts and components will be documented and maintained throughout fabrication, installation or erection and use of the item and be verified as to being correct prior to release for fabrication, assembling, shipping or installation. The identification system for the Station will be established by the Station Nuclear Engineering Department with assistance from the Architect Engineer and Nuclear Steam Supply System vendor as needed, and consists of unique numbers assigned to pipes, instruments, valves and equipment. Also, stored spare parts and equipment will be assigned established Stores Item Numbers by the Production Stores Group. 10

Assigned identification of materials, parts and components will be unique to the item. Identification will be on the item where practicable, and/or on records traceable to the item.

During fabrication, installation, erection and use of items, identification will be maintained traceable to the documentation of sub-components and/or materials when specified. Engineering review will establish that stamps, tags, or labels affixing identification to an item will not affect the properties or otherwise cause deterioration of the item and that stamps, tags and labels shall be made of material that will assure identification is not lost. The identification systems used by Commonwealth Edison Company, its contractors and major vendors for a nuclear generating station will be integrated to the extent necessary for uniformity.

The identity of items, components, equipment and systems generally will be applied during the design phase. The procurement of items and components will use this identity and it will be maintained during fabrication

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performed by vendors. The receiving inspection, erection, repair and maintenance records of engineered items and components which are filed at the construction site or Station will be traceable to the engineering identity. Items and components which have not been subjected to required inspection and tests prior to receipt will be tagged or marked and controlled to preclude usage. Also, nonconforming items will be identified and controlled to preclude usage.

Stored replacement spare parts and equipment will be similarly identified by Stores Item Numbers during purchase, storage, and installation to assure required traceability to records and documents and to prevent their incorrect use. Part numbers are assigned by the Production Stores Group. The Station Stores Supervisor maintains parts, material, and equipment in storage traceable to quality assurance documents. 10

areas and facilities are provided to assure protection of stored items. The Station Stores Supervisor controls such special handling and storage of station and other assigned spare parts, material and equipment in accordance with supplier instructions. Procedures and instructions to protect nuclear fuel are provided as part of the Station Procedures Manual for use by the Fuel Handling Foreman and the Nuclear Materials Custodian. 10

18. AUDITS

Audits will be performed by Commonwealth Edison Company and/or its contractors, subcontractors and vendors to verify the implementation and effectiveness of quality programs under their cognizance. The number and experience of persons participating in audits will vary according to the nature and significance of the audit.

Audits under the responsibility of the Manager of Quality Assurance will cover quality systems for engineering, construction, modifications, maintenance, in-service inspection and Stores activities. Audits will be performed to evaluate the implementation of the quality assurance programs and the adherence to procedures and controls. Certifications and records will also be evaluated. Product audits assess the effectiveness of inspections and tests that are specific to the fabrication, installation, construction, testing and operation of an item.

The performance and compliance of each operating station to the Quality Assurance Program is assured through surveillance of operations by the Quality Assurance Engineer or Inspector who is responsible to the Director of Quality Assurance (Operating) and through review, surveillance and audit of maintenance, modifications, Stores activities and in-service inspection by the Quality Assurance Engineer or Inspector for maintenance who is responsible to the Quality Assurance Supervisor (Maintenance). 10

Audits will be conducted using checklists or an agenda approved by responsible Quality Assurance Department personnel and will be conducted to evaluate compliance with all aspects of the Quality Assurance Program. Audits will be initiated early to assure effective quality assurance during design, procurement, manufacturing, construction and installation, inspection and test and be performed efficiently in order to achieve a minimum of interference with work in progress and minimum

disruption of organizations being audited. An audit plan will be maintained in order to schedule audits of site contractors. Audits of off-site contractors generally will be conducted in conjunction with plant visits for witnessing inspection points. Also, periodically Quality Assurance will participate in such audits or perform independent audits to assure effectiveness of the program, compliance to the program and fulfillment of procurement requirements.

The elements in the quality program, in procurement documents and in related codes and standards, are subject to systems audits. Also, items received, fabricated and constructed or installed for use by Commonwealth Edison Company in its nuclear power plants are subject to audits.

Audits will be performed selectively at various stages of contracts on a varying frequency, based on the nature and safety significance of the work being done to verify compliance and determine the effectiveness of procedures, inspections, tests, process controls and documentation. In addition to these audits, Quality Assurance will conduct approximately annually, overall system audits of the NSSS vendor, the Architect Engineer and involved Edison Departments. Audits of CECo are also performed by the Authorized Inspection Agency as required by the ANSI N626 series of Standards.

For operating stations, periodic Quality Assurance Department audits will be performed to verify compliance with, and the effectiveness of the program. Audits covering operating will be performed in accordance with the Technical Specifications under the direction and responsibility of the Director of Quality Assurance (Operating) independent of the Production Department. Surveillance, review and audits covering maintenance, modifications, in-service inspection and Stores activities will be performed under the direction and responsibility of the Quality Assurance Supervisor (Maintenance). Audit results and recommendations of corrective action will be documented and reviewed with the management of the Station. Verification of the completion of corrective action recommended in audit reports will be performed by the Technical Staff Supervisor. Follow-up of open station items is tracked by the Action Item Record's (AIR) System. Approval as to satisfactory completion of corrective action shall be obtained from the responsible station Quality Assurance Engineer or Inspector. 10