

Regulatory
OQA Plan
1/17/74
Rev. 3

50-289

GENERAL PUBLIC UTILITIES CORPORATION

METROPOLITAN EDISON COMPANY

GENERATION DIVISION

OPERATING QUALITY ASSURANCE PLAN

FOR

NUCLEAR GENERATING STATIONS



THREE MILE ISLAND NUCLEAR GENERATING STATION

UNIT NO. 1

**RETURN TO REGULATORY CENTRAL FILES
ROOM 016**

Approved _____

Title

R. C. Arnold
Vice President
Generation

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METROPOLITAN EDISON COMPANY SUBSIDIARY OF GENERAL PUBLIC UTILITIES CORPORATION

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**Operating Quality Assurance Program
Three Mile Island Nuclear Generating Station Unit 1**

It is the policy of Metropolitan Edison Company to meet the requirements of the Code of Federal Regulations, 10CFR50, Appendix B, and the applicable codes with respect to operation, inservice inspection, refueling, maintenance, procurement, repair, and modification of the Three Mile Island Nuclear Generating Station Unit 1. Our "Operating Quality Assurance Program" is now prepared.

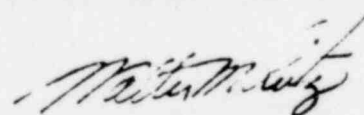
The Vice President-Generation is responsible for assuring that this Operating Quality Assurance Program is implemented. The organization for Metropolitan Edison Company's Operating Quality Assurance Program for Three Mile Island is shown in the attached figure 1.

The Metropolitan Edison Company Manager-Operational Quality Assurance will report to the Metropolitan Edison Company Vice President-Generation and is responsible for developing the detailed program, updating it as necessary, and monitoring all on-site and off-site activities required by the program to assure compliance with its requirements. He has the authority and the organizational freedom necessary to carry out his responsibilities.

The Metropolitan Edison Company Manager-Operational Quality Assurance, in developing the details of the Operating Quality Assurance Program for the Three Mile Island Station Unit 1, will coordinate his efforts with the GPU Service Corporation's Manager of Quality Assurance. This coordination is to assure that all the GPU companies have the same basic approach for their operational quality assurance programs and procedures.

The Vice President-Generation will, from time to time, review the overall effectiveness of the Quality Assurance Program. Any problem identified during the course of his review which requires administrative corrective action will be reported to me, together with appropriate recommendations.

Implementation of this policy will further the continued safe and reliable operation of our Three Mile Island Nuclear Generating Station Unit 1.


Walter M. Creitz
President

Date Jan 22, 1974

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INTRODUCTION

The Metropolitan Edison Company has authorized the establishment of a formal and comprehensive Operating Quality Assurance Program for the Three Mile Island Nuclear Generating Station Unit 1. This program shall be implemented throughout plant life in accordance with approved policies, procedures, and instructions.

The GPU Service Corporation has been assigned responsibility for the overall direction and administration of the initial test program as set forth in Chapter 13 of the Final Safety Analysis Report. The GPUSC Start-up and Test Quality Assurance Plan assigns and defines responsibilities for implementing the requirements of AEC regulation 10CFR50 Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," for initial plant testing. Maintenance and system modifications, identified during the conduct of initial testing as being necessary, may be accomplished in accordance with the provisions of the GPUSC Start-up and Test Quality Assurance Plan.

The Three Mile Island Unit 1 Operating Quality Assurance Program consists of this Quality Assurance Plan, detailed procedures used to implement it, and all those activities carried out in accordance with the plan and procedures. The Operating Quality Assurance Plan includes a detailed description of the responsibilities and controls for quality activities associated with the Three Mile Island Nuclear Generating Station Unit 1.

PURPOSE AND SCOPE

The purpose of this Operating Quality Assurance Plan is to assign and define responsibilities for implementing the requirements of AEC Regulation 10CFR50 Appendix B, "Quality Assurance Criteria for Nuclear Power Plants," and the Metropolitan Edison Company Policy Statement regarding the Operating Quality Assurance Program for the Three Mile Island Nuclear Generating Station Unit 1. Metropolitan Edison Company retains overall responsibility for all activities associated with this plan. This overall responsibility is assigned to the Vice President-Generation. The work is performed either by Metropolitan Edison Company personnel or by organizations or personnel performing services for or under contract to Metropolitan Edison Company.

This Quality Assurance Plan applies to the design, installation, procurement, fabrication, inspection, operation, maintenance, refueling, and modification of systems, components, materials, and facilities essential for preventing or mitigating the effects of accidents which could affect the public health and safety. Specifically, those systems and components identified in the Quality Assurance Systems List (summary included as Appendix A to this Operating Quality Assurance Plan) or specified in engineering documents are within the scope of this Quality Assurance Plan. It should be noted that this plan does not cover the procurement of nuclear fuel. The procurement of nuclear fuel is covered by a separate GPU Quality Assurance Program.

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PROGRAM DESCRIPTION FORMAT

The description of the Metropolitan Edison Company Operating Quality Assurance Program is arranged under major headings I through XVIII of this plan which correspond with the eighteen criteria contained in 10CFR50 Appendix B. The information required by Section 17.2, "Quality Assurance Program for Station Operations" of the AEC "Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants" is included under each heading of this Quality Assurance Plan.

Under each heading a statement is made which indicates the individuals and organizations responsible for insuring compliance with the criterion. The list of preliminary procedures which will be used in the implementation of this program is described in Appendix C of this plan.

DEFINITIONS

Inspection

A phase of QA which by means of examination, observation, or reasurement determines the conformance of material, supplies, components, parts, appurtenances, or specific processes, structures or systems to predetermined quality requirements.

Minor Modifications

A planned change in plant design which

- 1) does not involve a system, component, or structure included on the Quality Assurance Systems List;
- 2) does not involve an unreviewed safety question, as defined by 10CFR50.59C;
- 3) does not render the plant and its operations unlike that described in the FSAR.

Major Modifications

A planned change in plant design which does not fall in the category of minor modifications.

Operation

Comprises those actions required to control, monitor, and supervise the functioning of plant equipment and facilities. Operation includes, but is not limited to, power operation, shutdown, refueling, and startup.

Surveillance

A phase of QA which by means of examination, observation, or measurement determines the conformance of comprehensive systems, processes, or structures to predetermined quality requirements.

Surveillance Testing

Whenever "surveillance" is used in context with actions required of the site personnel, it is defined as those tests which are performed as required in the Surveillance Testing Program as listed in the Technical Specifications.

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Site Personnel
(Plant Staff)

Is that organization which includes the Station Superintendent and those people responsible to him. It does not include the quality assurance and quality control personnel located at the plant; who are part of Operational Quality Assurance.

Quality Assurance
Review and Concurrence

Quality Assurance review involves checks by Quality Assurance that documents are satisfactory from a Quality Assurance standpoint, e.g., make necessary provisions for Quality Assurance program requirements, specify required Quality Control inspections, and comply with or invoke appropriate codes, standards, and regulations. Quality Assurance concurrence means that all Quality Assurance comments on the document must be resolved to the satisfaction of Quality Assurance prior to the document being used.

Quality Assurance
Surveillance

Whenever "surveillance" is used in context with actions required of the Operational Quality Assurance organization or its representative, it is defined as those real time actions taken to assure that the organization being surveyed is functioning in accordance with predetermined requirements.

Test

Comprises those activities conducted to assure that structures, systems, and components will meet specified requirements.

I. Organization

The overall Metropolitan Edison Company organization is shown in Figure 1. Positions responsible for the principal elements of this Operating Quality Assurance Program (as shown in Figures 1 & 2) are:

President, Metropolitan Edison Company
Vice President-Generation
Manager-Operational Quality Assurance
Manager-Generation Operations
Manager-Generation Engineering
Manager-Generation Maintenance
Three Mile Island Station Superintendent
Quality Control Supervisor

In addition to the above individuals, two advisory groups are utilized in carrying out quality related functions for plant operations. These are the Plant Operations Review Committee and the General Office Review Board whose make-up, qualifications, and responsibilities are described in the Technical Specifications, Section 15.6.1.

President

The Metropolitan Edison Company Quality Assurance Program for the operation of the Three Mile Island Nuclear Generating Station Unit 1 was established by direction of the President of Metropolitan Edison Company. Problems that may develop with the basic approach Metropolitan Edison Company is taking with quality assurance for an operational plant or with the Company's policy regarding quality assurance shall be brought to the attention of the Metropolitan Edison Company President for appropriate corrective action.

Vice President-Generation

The Metropolitan Edison Company Quality Assurance Program for the operation of Three Mile Island Nuclear Generation Station Unit 1 will be implemented under the direction of the Vice President-Generation, and as such, he is responsible for overall effectiveness of the program. This responsibility is carried out through the Manager-Operational Quality Assurance, Manager-Generation Operations, Manager-Generation Engineering and the Manager-Generation Maintenance, who all report to the Vice President-Generation. On an individual case basis, the Vice President-Generation can arrange with other organizations, such as GE Service Corporation for assistance in support of the Metropolitan Edison Company Quality Assurance Program; in such cases, he is responsible for assuring that these organizations have suitable quality assurance programs for the work they perform, as further discussed in Section VII. The Vice President-Generation is responsible for assuring that management reviews are conducted and documented on the effectiveness of the Quality Assurance Program. These reviews are comprised of actions taken by Metropolitan Edison Company upper management to assure that the Operational Quality Assurance Program is functioning in accordance with the basic Company Policy as established in the Policy Statement. The review will be conducted at least every two years, and the results of the review will be reported to the President.

Manager-Operational Quality Assurance

The Manager-Operational Quality Assurance, who reports to the Vice President-Generation, has the responsibility for ensuring the detailed development, direction and overall coordination of operational quality assurance activities for Three Mile Island Nuclear Generating Station Unit 1 which covers all activities affecting quality, including operations, inservice inspection, maintenance, refueling, modifications, engineering support and procurement for the Three Mile Island Nuclear Generating Station Unit 1. The Manager-Operational Quality Assurance has the authority and organizational freedom to identify quality problems and provide solutions.

In the detailed implementation of this program, the Manager-Operational Quality Assurance will coordinate with the GPU Service Corporation Manager of Quality Assurance. This coordination is to ensure that all GPU companies employ the same basic approach to operational quality assurance programs and procedures in the interest of standardization and multi-plant use where feasible.

Specific responsibilities of the Manager-Operational Quality Assurance include:

1. Development and implementation of the Operating Quality Assurance Program and changes thereto.
2. Maintenance of Operational Quality Assurance organization in accordance with the Operational Quality Assurance Program.
3. Development and implementation of a quality assurance training program for quality assurance personnel. He also ensures that quality assurance indoctrination is provided to appropriate personnel outside of the quality assurance organization.
4. Supervision and direction of generation department staff quality assurance engineers and the site quality assurance organization under the site Quality Control Supervisor.
5. Approval or concurrence with Metropolitan Edison Company and vendor quality assurance and quality control documents (such as NDE and special process procedures) in accordance with this Quality Assurance Plan.
6. Concurrence, from a quality assurance standpoint, with design and engineering documents such as specifications, drawings, and installation requirements used for equipment or site work.
7. Concurrence with the Quality Assurance Systems List.
8. Review and approval of audit and surveillance schedules, supervision of the planning for audits and surveillance, review of results of audits and surveillance, and ensuring of follow-up correction of nonconformances.

9. Review and concurrence with documents, procedures, and changes thereto in accordance with appendices B to D of this plan.
10. Reporting audit results (including significant by himself) to the Vice President-Generation. In addition he appraises the Vice President-Generation on the effectiveness and adequacy of this program.
11. Supervise and direct vendor quality assurance evaluation and source inspections.

When quality problems occur, the Manager-Operational Quality Assurance has the responsibility and authority to take the necessary corrective action which can include the stoppage of work when manufacturing, maintenance, or modification work fails to comply with the approved specifications and plans. Such corrective action will be arranged through the appropriate channels. For cases when the unit is operating, he may recommend to the Station Superintendent that the plant be shut down. The Station Superintendent has the final responsibility for the overall evaluation of all aspects and implications of shutting down the operating unit. Whenever the Manager-Operational Quality Assurance stops work or recommends the unit be shut down, as discussed above, he will, as soon as practicable, inform the Vice President-Generation of his actions and reasons therefore.

The Manager-Operational Quality Assurance shall have a baccalaureate in engineering or science with at least five years experience in nuclear plant operations and support activities. He will be assisted in carrying out his responsibilities by Quality Assurance Engineers and the site Quality Assurance Supervisor and staff described below.

Quality Assurance Engineers

The Quality Assurance Engineers report to the Manager-Operational Quality Assurance and perform the quality assurance engineering functions (Figure 3). They shall have a baccalaureate in engineering or science or have equivalent experience. Their responsibility is to assure quality and, when in performance of their duties a quality problem is detected, they will ensure that appropriate corrective action is taken. They carry out the following responsibilities as appropriate:

1. Prepare operational quality assurance procedures and changes thereto.
2. Prepare audit and surveillance schedules and perform audits and surveillances of all activities affecting quality including plant operations, Generation Division activities, suppliers of engineering services, equipment suppliers, site contractors, etc.
3. Establish a program for the identification, storage, and retrievability of quality control and quality assurance records and maintain home office quality assurance records as specified in quality assurance procedures.
4. Review various documents for adequacy of quality control and assurance requirements, including: Generation Division administrative procedures implementing the Quality Assurance Plan; and installation requirement documents.

5. Quality assurance evaluation of suppliers of engineering services, including performance of preaward audits when appropriate.
6. Vendor quality assurance evaluation, in-process inspection and audits in support of procurement of items for spare parts, repairs, and modifications.
7. Review vendor quality control and nondestructive examination procedures as required by specific specifications.
8. Review site quality control, special process and nondestructive examination procedures.
9. Carry out document control procedures for all documents issued by the Quality Assurance Department.

Quality Control Supervisor and Specialists/Assistants

The Quality Control Supervisor is located at the Three Mile Island Station site and reports to the Manager-Operational Quality Assurance. He has authority to take appropriate corrective action, including the stoppage of work on specific plant maintenance or modification activities, when work is not in conformance with approved procedures and specifications. He may also recommend to the Station Superintendent, if appropriate, that the plant be shut down when a serious quality problem is identified. The final responsibility for the overall evaluation of all aspects and implications of shutting down an operating unit is the Station Superintendent's. In the event the Quality Control Supervisor recommends that the unit be shut down, he will so advise the Manager-Operational Quality Assurance without delay.

The Quality Control Supervisor is responsible for the following functions:

1. Supervising the site quality control group, including permanently assigned Quality Control Specialists/Assistants and any temporary quality assurance/control personnel assigned to the site.
2. Preparing procedures for station quality group activities and changes thereto.
3. Reviewing quality assurance record documents for adequacy and ensure that quality assurance records are properly maintained.
4. Reviewing and concurring with station Quality Control administrative procedures in regard to quality assurance requirements.
5. Reviewing and concurring with site maintenance, modification, and repair procedures (except for procedures for special processes and nondestructive examinations) with regard to quality assurance aspects.
6. Preparing and approving quality control checklists defining specific quality control inspections or surveillance to be performed in support of operations, tests, maintenance, modification, or repair activities.

7. Surveillance and audits of the station staff's various site activities involving nuclear-related structures, components and systems for compliance with written procedures and the Technical Specifications.
8. Performing inspections for items within the scope of quality control, including: receipt inspections, nondestructive examinations, and acceptance inspections following modifications, non-routine maintenance, or repairs.
9. Performing surveillance of site contractors to assure they meet specified quality control requirements.

The Quality Control Supervisor will either have a baccalaureate in engineering or science together with operational experience in the nuclear field or have a minimum of six years nuclear and quality control experience. He will be assisted by quality control specialists who will have a minimum of two years of relevant experience or by quality control assistants who have shown an aptitude for quality control work. When necessary, additional quality control personnel may be assigned to the Quality Control Supervisor to assist during outages, etc. These personnel will work under the direction of the Quality Control Supervisor and follow approved Metropolitan Edison Company procedures.

Manager-Generation Operations

The Manager-Generation Operations is responsible to the Vice President-Generation for the centralized control of Metropolitan Edison Company generating stations. As the immediate supervisor of the station superintendents, he has management responsibility for the overall direction of station operation. He is responsible for ensuring that station operations are carried out in accordance with the operating license including the Technical Specifications; This includes ensuring that this Quality Assurance Program and its implementing procedures are followed by the station staff. He carries out this responsibility through directions to the Station Superintendent.

Specific responsibilities of the Manager-Generation Operations include:

1. Maintaining a Generation Operations organization in accordance with this Operational Quality Assurance Program.
2. Ensuring that required station procedures are available and up-to-date.
3. Preparing draft responses to inquiries from regulatory and licensing agencies.
4. Ensuring that regulatory agencies are advised of reportable incidents.

The Manager-Generation Operations is assisted in carrying out his responsibilities by the Station Superintendent and station staff and by his generation department staff.

Station Superintendent

The Station Superintendent is directly responsible for the safe operation of Three Mile Island Nuclear Generating Station Unit 1. His specific responsibilities include:

1. Operating the Three Mile Island Nuclear Generating Station Unit 1 in compliance with the requirements of the operating license including Technical Specifications and this Operating Quality Assurance Plan.
2. Initiating corrective action (including shutdown of the unit as required by the Technical Specifications) when operations are not being conducted in accordance with the requirements contained in 1 above.
3. Ensuring that conditions adverse to quality, when identified, are corrected for all activities involving operations, maintenance, and site engineering.
4. Approving and implementing station administration, operation, maintenance, refueling, health physics, environmental and emergency procedures as required by the Technical Specifications, Section 15.6.1 and 15.6.2.
5. Ensuring that modifications to structures, components and systems are properly coordinated and that necessary safety precautions; e.g., tag outs, draining of systems, designation of exclusion areas, etc., are performed in accordance with written procedures.
6. Ensuring that plant purchase requisitions are prepared using approved specifications which have received required quality assurance and engineering reviews.
7. Ensuring that station staff training and qualifications are maintained.
8. Ensuring inservice inspections are performed as required.

The Station Superintendent is assisted in carrying out the above responsibilities by the Station Engineer, the Maintenance Supervisor, and the Operations Supervisor, and their staffs. The organization, responsibilities and qualifications of the station staff are specified in station procedures.

Manager-Generation Engineering

The Manager-Generation Engineering reports to the Vice President-Generation and has the responsibility for the detailed development, direction, and overall coordination of engineering activities for the Three Mile Island Nuclear Generating Station Unit 1. This includes modifications, engineering support, and procurement for the station. The Manager-Generation Engineering is responsible for providing technical support to other Generation Department groups, including Station Superintendents.

Specific responsibilities of the Manager-Generation Engineering include:

1. Performing generation engineering in accordance with this Quality Assurance Program.
2. Developing and implementing Generation Engineering procedures covering items such as engineering control of modifications, design control, etc.
3. Exercising project control of modifications, including design work, preparation of procurement documents, procurement of equipment and services, installation, and testing.
4. Controlling preparation of specifications and drawings for the accomplishment of repairs and modifications. This includes the administration of engineering services supplied by other organizations, and ensuring that engineering work is given appropriate design checks or reviews.
5. Providing evaluation of contractors and vendors for technical adequacy as required.
6. Providing for training of Generation Engineering personnel.
7. Carrying out document control procedures for Generation Engineering controlled procedures, specifications, and drawings.
8. Developing the inservice inspection program technical requirements for implementation by the Station staff.
9. Establishing and maintaining the Quality Assurance Systems List.
10. Verifying proper management of engineering and procurement of fuel.
11. Final preparation of and responsibility for responses to inquiries from regulatory & licensing agencies using support from other departments as necessary.
12. Coordinating engineering and design methods utilized for the Three Mile Island Nuclear Generating Station Unit 1 with the GPU Service Corporation Manager of Engineering to ensure that all GPU companies employ the same basic approach and procedures in the interest of standardization and multi-plant use where possible.

The Manager-Generation Engineering is assisted in carrying out the above responsibilities by the organization shown in Figure 4.

Manager-Generation Maintenance

The Manager-Generation Maintenance is responsible to the Vice President-Generation for scheduling and coordinating major plant outages of all Metropolitan Edison Company generating stations including the performance of

overhauls, maintenance, and refueling work. In addition, he provides technical assistance, such as turbine specialists, welding engineers, instrument engineers, etc. The Manager-Generation Maintenance reviews maintenance practices on a system-wide basis to ensure that standardization is achieved. He is available to all plant superintendents for consultation and troubleshooting on maintenance problems. Upon completion of significant maintenance projects, he will prepare reports which include information on the cause of the problem, corrective action required to prevent or reduce the problem and other administrative or technical recommendations as appropriate.

Specific responsibilities of the Manager-Generation Maintenance include:

1. Performing Generation Maintenance in accordance with this Operational Quality Assurance Program.
2. Developing and qualifying, where required by applicable codes, standard Metropolitan Edison Company generation maintenance procedures for activities such as welding, brazing, and heat treatment.
3. Maintaining qualifications of personnel within his organization where required by applicable codes, e.g., welders.
4. Providing assistance to Three Mile Island Nuclear Generating Station Unit 1 staff as necessary in support of normal and emergency maintenance. Such work is performed in accordance with approved Three Mile Island Nuclear Generating Unit 1 maintenance procedures except for procedures covered by 2. above.

The Manager-Generation Maintenance is assisted by the organization shown in Figure 5. The Supervisor-Mechanical Maintenance is responsible for welding procedures, welder qualification, and providing engineering support for mechanical maintenance. The Supervisor-Electrical Maintenance is responsible for engineering support of electrical maintenance. The Supervisor-Centralized Maintenance is responsible for administration of the centralized maintenance crews.

II. Quality Assurance Program

This program is applied to the safety related items of the Three Mile Island Nuclear Generating Station Unit 1 that prevent or mitigate the consequences of postulated accidents which could cause undue risk to the health and safety of the public. A summary of structures and systems covered in whole or in part by this program are identified in Appendix A. The actual boundaries of these systems and structures will be specified in the Quality Assurance Systems Lists. The Manager-Generation Engineering, with concurrence of the Manager-Operational Quality Assurance, is responsible for development of this list.

The Manager-Operational Quality Assurance has the direct responsibility for ensuring that this Operating Quality Assurance Program is implemented and that it provides for control of all activities affecting quality on nuclear safety related items. He is also responsible for ensuring that the program is modified and updated as standards, regulations, results, and experience dictate. The various groups involved in the Operational Quality Assurance Program, and their responsibilities, are described in Section I of this Plan.

The Operating Quality Assurance Program is described by written policy, plan and procedure documents. The basic company policy is established by the President in his Policy Statement. This Operating Quality Assurance Plan is issued by the Vice President-Generation. The procedures, which are the Operating Quality Assurance Program's detailed requirements, are originated and approved as shown in Appendix B to this plan, Quality Assurance Program Procedure Categories and Approvals.

An outline of the quality assurance procedures to be used to implement the Operating Quality Assurance Program is included in Appendix C to this plan. The listed procedures are expected to be complete and approved by the dates shown in the letter of transmittal for this amendment.

The Manager-Operational Quality Assurance is responsible for maintaining a comprehensive training program for both the original and refresher training of personnel in the Operating Quality Assurance Staff. He also ensures that quality assurance indoctrination is given to Generation Department personnel who are not in the Operating Quality Assurance Staff but whose job responsibility will affect quality. The training program will include, as appropriate: lectures, formal schools, job experience, and individual study.

Each manager maintains formal training programs and procedures to ensure the proper job related training and qualification of his personnel. The Station Superintendent is responsible for the indoctrination and training of plant staff personnel performing activities affecting quality or operations, and for ensuring that, where required by FSAR Section 15.6.1, operators are formally licensed or qualified.

All contractors who perform engineering, construction, or other technical services on structures, components or systems are required to meet those portions of the AEC Regulation 10CFR50, Appendix B, which are applicable to their services and the materials and equipment which they

supply. The Manager-Generation Engineering is responsible for ensuring that these requirements are contained in the specifications and purchase documents as appropriate along with the quality assurance safety class of the component or system involved.

The Operating Quality Assurance Program requires that the Vice President-Generation performs a management review, at least every two years, of the effectiveness of the Operating Quality Assurance Program. The Vice President-Generation will utilize a group independent of the Operational Quality Assurance Group to perform these reviews or audits. Additional audits and reviews of selected portions of the Operating Quality Assurance Program will be performed by PORC, GORB, and/or the offsite technical staff in accordance with section 15.6.1 of the FSAR.

With regard to the ANSI Standards N18.7 and N45.2 series, it is the policy of Metropolitan Edison Company to maintain a current working knowledge of these standards and in the preparation and maintenance of the Operational Quality Assurance Plan and its implementing procedures, the Company will use the standards as guidance, where applicable, in the establishment of specific requirements. In the event a particular position is not incorporated directly from the standard, an alternative position will be taken. As standards are revised and improved, the changes will be reviewed for applicability and incorporation into the Operational Quality Assurance Program.

III. Design, Modification, Maintenance, and Repair Control

A. Design and Modification

The Manager-Generation Engineering is responsible for controlling design work and administering design control activities (including design interfaces) for the modification of nuclear safety related structures, components, and systems. Engineering will be performed by Metropolitan Edison Company personnel or by organizations providing services to the Company.

The Manager-Generation Engineering is responsible for the preparation of the Quality Assurance Systems List. The Manager-Operational Quality Assurance is responsible for reviewing the Quality Assurance Systems List for concurrence on quality assurance aspects. The Quality Assurance Systems List is a list of those systems which are within the scope of this Quality Assurance Plan.

Design control is implemented by means of Generation Engineering Procedures which include: design considerations; design review requirements; internal and external interface control considerations; and design document review, approval, distribution, control, and revision requirements. Design considerations include, as appropriate: physics, stress, materials, thermal hydraulic, radiation and accident analysis; appropriate design basis, codes, standards, and regulations; acceptance and rejection criteria; and quality assurance/quality control. Design verification includes the use of formal design reviews, checks or tests as appropriate to ensure the adequacy of the design with regard to design considerations. Design reviews may be conducted by means of the same, an alternate, or a simplified calculational method or by the performance of a suitable testing program. A design review will be performed by an individual or group other than the individual or group who performed the original design, but who may be from the same organization.

The Manager-Generation Engineering is responsible for ensuring that design control procedures, whether the work is done by Metropolitan Edison Company or by other organizations, are prepared and implemented and incorporate appropriate design control practices, checks, and reviews. Among other things, satisfactory design control requires that an independent design verification is performed.

Proposed plant modification packages and their implementation are the responsibility of the Manager-Generation Engineering and controlled by means of written Generation Engineering procedures. This coordination includes the necessary interface with the Station Staff in regard to station scheduling, station procedure preparation and approval, Plant Operations Review Committee and General Office Review Board review and approval, etc. Proposed station modifications are reviewed and approved by the Plant Operations Review Committee and the General Office Review Board, prior to their implementation, when required by the Technical Specifications, Section 6.1.

The Manager-Generation Engineering is responsible for the timely approval and updating of specifications and drawings, as well as changes or deviations thereto, utilized for purchase or installation of materials, parts or components. Any other design documents, specifications, drawings, installation requirements, and changes thereto, are approved in the same manner.

Specifications, design documents, drawings, installation requirements and changes thereto, are reviewed by Operating Quality Assurance personnel for the inclusion of quality assurance/quality control program requirements as well as for the use of proper codes, material specifications, etc., and require the concurrence of the Manager-Operational Quality Assurance.

The Manager-Generation Engineering is responsible for the maintenance of design documents in accordance with Sections VI and XVII (Document Control and Quality Assurance Records) of this Plan.

Minor design and modification work may be performed by plant engineers; however, when this alternative is utilized, the plant engineers are subject to the Generation Engineering design and modification control procedures. In addition, the Manager-Generation Engineering retains the responsibility for the proper review and approval of design and modification documents.

For fuel design, the Manager-Generation Engineering is responsible for ensuring proper management of design and engineering of fuel.

B. Maintenance and Repair

The Station Superintendent is responsible for the preparation, review, and approval of the Station maintenance control procedure. This procedure specifies the manner in which plant maintenance and repair is controlled by distinguishing between different types of maintenance and repair and specifying the applicable requirements for control of each, including the use of: approved procedures, instructions and/or drawings during maintenance or repair work; maintenance request forms which specify the work scope and provide for signatures which document that appropriate requirements have been established, reviewed, concurred with and approved; quality control checklists; etc.

Maintenance is divided into routine and nonroutine maintenance:

- (1) Routine maintenance is maintenance which does not require Generation Engineering participation and includes preventive maintenance (e.g., lubricating bearings, vibrational analysis, etc.) and maintenance involving correction of minor conditions such as leaking valve packing.
- (2) Nonroutine maintenance is maintenance which requires Generation Engineering assistance because it involves unusual conditions or major amounts of work requiring detailed engineering preparations. Nonroutine maintenance is treated as nonroutine repair work in the manner described below.

Repairs are considered to be of two types:

- (1) Routine repairs are normal and often repetitive repairs which do not require special engineering assistance and thus are considered equivalent to routine maintenance. Examples of this type of routine repair equivalent to maintenance are lapping of small leaking valves and replacement of leaking gaskets with approved gaskets in items where no special problems such as chronic failures requiring engineering resolution are involved.

- (2) Nonroutine repairs are those requiring special engineering input and are handled in the same manner as modifications, i.e., Generation Engineering exercises technical control of the repairs. All repairs which do not restore safety related items to their original conditions (i.e., involve some sort of modification or change) are included in this category.

The Station Superintendent is responsible for the proper determination of system classification in accordance with the Quality Assurance Systems List and whether or not the task is within the station staff capability (and hence is handled as described for the maintenance function) or requires engineering assistance and is handled as nonroutine repair. In the event the classification is unclear, the Station Superintendent requests clarification from the Manager-Generation Engineering.

The Quality Control Supervisor may, at his discretion, provide standard quality control checklists for routine repair and maintenance. If the maintenance or repair action is within the scope of a standard, approved quality control checklist, the checklist is issued by maintenance supervision prior to maintenance or repair work, completed by the maintenance personnel during the work, and approved by the Maintenance Foreman, as required on the checklist (which could be at various steps in the procedure or at completion of the work). In the event standard checklists are not available, the maintenance or repair action is to be reviewed for concurrence by Operating Quality Assurance personnel. This review covers quality assurance requirements including preparation of Quality Control Checklists.

As required by the Station Superintendents' classification of the maintenance or repair, the Generation Engineering personnel are utilized for technical support. This technical support includes calculations, design work, procurement, specification preparation, recommendations, etc.

IV. Procurement Document Control

Procurement document control applies to the control of procurement documents for materials, parts, components, and services required to perform design, maintenance, repair, modification, operation, test, refueling, inservice inspection, and quality assurance functions. Such documents may be prepared by Metropolitan Edison Company or by a design contractor or agent and include purchase requisitions, purchase orders, service agreements and invoked specifications, drawings, etc.

Procurement documents prepared by or for the Generation Division shall be prepared, reviewed, approved, revised, and controlled in accordance with the Generation Division procedures "Procurement Document Control". The preparation, review, and approval of engineering procedures is the responsibility of the Manager-Generation Engineering. It requires that, in the preparation of procurement documents, consideration be given to at least the items listed in Table IV-1.

Procurements of materials, parts, or components are initiated by purchase requisitions prepared by the station staff or by others in the Generation Division. The Generation Division procurement procedures require that an organization preparing a requisition insures that all applicable items listed in Table IV-1 are considered and included as appropriate in the requisition, invoked specifications or drawings.

For station initiated purchase requisitions, the Station Superintendent is responsible for the determination of the system or component safety class in accordance with the Quality Assurance Systems List. If the classification is unclear, he contacts Generation Engineering for resolution. For items within the scope of this Quality Assurance Plan, purchase requisitions and invoked requirements are to be reviewed for concurrence by the site Quality Control Supervisor. Further, if the requirements invoked by the purchase requisition are not taken from current approved Generation Engineering specifications or drawings, then Generation Engineering approval of the requisition and invoked requirements is required.

For cases where requisitions are not prepared by the station, the requisition and invoked requirements, including specifications prepared by outside organizations, must be reviewed for concurrence by the Generation Engineering and Operational Quality Assurance staffs.

After purchase requisitions have received the required approvals and concurrences described above, they are converted to purchase orders and selection of vendors is controlled as described in Criterion VII. It should be noted that under no circumstances will purchase requisition requirements be altered (except for pricing and quantity) during order placement unless review and concurrence is obtained from those who were originally required to review, concur with, and approve the requisition as described above.

Generation Engineering review of procurement documents (including service agreements) includes verification of appropriate classifications, technical requirements, and code application. Operational Quality Assurance review of the above includes checks to verify that proper codes, regulatory requirements, material specifications (ASTM, AWS, etc.) are invoked; that FSAR commitments are covered; that appropriate acceptance or rejection criteria are incorporated; and that quality assurance/quality control program requirements are incorporated.

Once issued, the procurement documents are controlled in accordance with appropriate sections of this plan, especially document control, Section VI.

For fuel, the Manager-Generation Engineering is responsible for ensuring proper management of fuel purchasing.

TABLE IV-1

Procurement Document Requirements

Items to be considered for inclusion in procurement documents include:

1. Component identification.
2. Component or system safety class.
3. Quantitative and qualitative technical and functional requirements and acceptance/rejection criteria.
4. Applicable regulatory code and standard requirements.
5. Drawings, specifications, instructions, and procedures to be invoked on suppliers.
6. Special test and inspection requirements.
7. Submittal, approval, and retention requirements for documents such as special process and test procedures, quality assurance manuals, materials records, calculations and analyses.
8. Applicable 10CFR50, Appendix B quality assurance requirements such as for document control, control of special processes, control of sub-contractors work or services, etc.
9. Access rights for visits and audits by Metropolitan Edison Company personnel and their agents.
10. Interface requirements with other organizations, e.g., document submittal and review requirements between organizations.
11. Special requirements or responsibilities for design, procedure preparation, fabrication, cleaning, testing, packaging, handling, shipping, storing, etc.

V. Instructions, Procedures, and Drawings

This section covers instructions, procedures, and drawings of an internal Metropolitan Edison Company nature (requirements for vendors and contractors to have appropriate instructions, procedures, and drawings are included in procurement documents as discussed in Section IV of this Plan). Appendix B of this plan lists the categories of procedures used for implementing the Quality Assurance Program and Appendix C contains the initial list of required procedures. The Quality Assurance Program procedures are designed to provide detailed written requirements which fulfill the plan's objective of assuring a quality product. In so doing they will additionally assure compliance with 10CFR Part 50 Appendix B.

The Station Superintendent is responsible for ensuring that instructions and procedures associated with the administration, operation, health physics, environmental monitoring, fuel handling, inservice inspection, calibration, maintenance, and operational testing of structures, components, and systems are prepared, reviewed, approved, and implemented in accordance with this Quality Assurance Plan. This also includes the issuance of appropriate changes to such documents upon receipt of regulatory directives, instructions from Metropolitan Edison Company management, or accomplishments of modifications. The Plant Operations Review Committee, which serves in an advisory capacity to the Superintendent, has the responsibility for reviewing procedures prior to their approval by the Station Superintendent when required by the Technical Specifications, Sections 6.1 and 6.2. The Station Superintendent is also responsible for assuring plant administrative, maintenance, repair, modification and inservice inspection procedures are reviewed for concurrence, prior to use, by the Quality Assurance Department for quality assurance requirements.

Each manager is responsible for developing, reviewing, approving, and implementing his group's procedures as required to implement this Operational Quality Assurance Plan. These procedures cover activities such as document control, training of personnel, responsibilities and duties of personnel, etc. The Manager-Operational Quality Assurance is responsible for the review of and concurrence with these procedures and changes thereto.

The Manager-Generation Engineering is responsible for the issuance and approval of specifications, drawings, and installation requirements associated with modifications to the nuclear safety-related structures, components, and systems in accordance with Section III (Design) above. These documents require those performing the work (either Metropolitan Edison Company or contractor personnel) to have and to follow appropriate instructions, drawings, and procedures. The Manager-Generation Engineering shall also establish a system for maintaining as-built drawings in a current status. This system includes written procedures covering updating of as-built drawings after station modifications and designating the persons responsible and procedures used for the revision, approval, distribution, and control of all as-built drawings.

The Manager-Operational Quality Assurance is responsible for the review of specifications, drawings, and installation requirements and any changes thereto for concurrence with quality assurance requirements.

The Quality Control Supervisor is responsible for preparing and implementing site quality assurance/control procedures and changes thereto. These procedures require the approval of the Manager-Operational Quality Assurance, and are reviewed by other interested persons when appropriate, e.g., the Station Superintendent or Station Engineer.

Persons preparing and approving documents are responsible for ensuring that specifications, instructions, procedures, and drawings include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished as well as assuring that these documents are maintained up-to-date.

Surveillance of the implementation of instructions, drawings, and procedures for operation, maintenance, modification, operational testing, etc., is the responsibility of the Manager-Operational Quality Assurance.

VI. Document Control

A standard Generation Division procedure for document control includes basic generic controls which are to be incorporated into specific written procedures by each manager and the Station Superintendent for use by himself and his staff. The basic procedure is prepared in accordance with this Operational Quality Assurance Plan and approved by the Vice President-Generation. Each Manager and the Station Superintendent are responsible for the preparation, approval, and implementation of his group's procedure in accordance with the requirements of the Generation Division procedure.

The Generation Division document control procedure requires that documents be controlled as appropriate considering the type of document involved and its importance to safety. Accordingly, it specifies the types of documents which must be controlled; identifies the difference between controlled and uncontrolled copies of the same document; includes the method for identifying holders of controlled copies; requires that only controlled copies of a document be used for official purposes; requires lists of effective revisions be issued periodically; requires distribution lists for the documents to be maintained by the distributors; requires that distributors transmit controlled documents using Generation Division forms internally and approved forms externally; and requires holders of controlled copies of documents to assume responsibility for the document and revisions as well as to certify that the document and/or revisions are entered and implemented. Types of documents which are controlled to various degrees include Technical Specifications, FSAR, Quality Assurance Plan, procedures (such as, quality assurance, operation, repair, maintenance, health physics, fuel handling, modification, administrative and environmental procedures), specifications, drawings, inspection and test results, procurement documents, quality assurance records, and nonconformance and corrective action documentation.

The Generation Division document control procedure further requires that each Manager and the Station Superintendent provide in their procedures for measures: to insure documents are available when required; to properly review and approve documents such as procedures, instructions, specifications, drawings, etc., to provide the same reviews and approvals for changes to documents as was required of the original document (unless the review and approval authority is delegated by Metropolitan Edison Company to another responsible and qualified organization); to require that review and approval organizations have access to pertinent information and adequate knowledge of the original document intent; to insure that approved changes be promptly transmitted for incorporation into documents; and to insure that obsolete or superseded documents are eliminated from the system and not used. Appendices "B" and "D" of this plan provide lists of procedure and document categories. These appendices specify review, concurrence and approval requirements for the included procedures and documents.

The Superintendent of the Three Mile Island Nuclear Generating Station Unit 1 is responsible for the implementation of the document control system for all instructions, procedures, drawings and other controlled documents received or prepared at the generating station for use in administering, operating, testing, maintaining, and modifying the nuclear safety-related structures, components, and systems. The Superintendent of the TMI Station Unit 1 will ensure that no changes are made to site instructions, procedures, and drawings unless such

changes are approved by the appropriate approving organization. A procedure for the formal handling of temporary procedures is contained in the station operating procedures. These temporary procedures may be issued during the operational phase: to direct operations during testing, refueling, maintenance and modifications; to provide guidance in unusual situations not within the scope of the normal procedures, and to insure orderly and uniform operations for short periods when the unit, a system, or a component of a system is performing in a manner not covered by existing detailed procedures or has been modified or extended in such a manner that portions of existing procedures do not apply. Temporary procedures shall include designation of the period of time during which they may be used and shall be subject to the review process of the original procedure. Temporary procedures shall be approved by the management representative assigned approval authority.

A Manager or the Station Superintendent, when originating a purchase order, is responsible for ensuring that procurement documents include appropriate document control provisions for document control by vendors and subvendors as well as between Met-Ed Company, vendors and subvendors.

The Manager-Operational Quality Assurance is responsible for quality assurance review and concurrence of procurement documents and, therefore, document control requirements. He is further responsible for review, inspection, surveillance, and audit, as appropriate, of document control systems to ensure adequate systems are implemented.

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VII. Control of Purchased Material, Equipment, and Services

Procurement documents, vendor selection, vendor surveillance, and receipt inspection are the four major means of controlling purchased material, equipment, components, and services. All procurement is conducted in accordance with procurement documents as stated in Section IV of this plan. All reviews, inspections, surveillances, and audits are conducted by personnel who are competent in establishing within the scope of their function whether or not a supplier is capable of providing acceptable, quality products.

A. Vendor Selection

Vendors must be on the approved vendors list prior to commencement of work by the vendor. Vendor evaluations are conducted by a team consisting of qualified personnel from the Quality Assurance staff, Generation Engineering staff, and/or other interested parties or their representatives as required. The depth of the vendor evaluation will vary depending on the complexity and importance to safety of the item involved. For example, for mass produced or off-the-shelf items, only a check of past performance may be necessary. On the other hand, for complex, important items a very thorough review may be necessary.

The Generation Engineering staff is responsible for evaluating the overall design or manufacturing capability of the vendor including his particular technical ability to produce the design, service, item, or component delineated in the procurement document. As part of this review, the vendor's design capabilities, manufacturing capabilities, special fabrication processes, output capabilities, handling capabilities, testing facilities, service capabilities, and experience are reviewed as necessary. The evaluating of vendors includes, as necessary, selection and testing of components in conjunction with receipt inspection and vendor surveillance.

The Operational Quality Assurance staff is responsible, as necessary, for evaluating the vendor's overall quality assurance organization and program in accordance with applicable codes, standards, applicable parts of 10CFR50 Appendix B, and Metropolitan Edison Company requirements. The review includes consideration of: company organization, quality assurance personnel qualifications, review and control of design documents, manufacturing procedures, quality assurance procedures, calibration practices, acceptance criteria, required quality assurance records and their retention, quality assurance requirements and controls imposed by the vendor on his subcontractors, and past performance and historical records demonstrating experience in the field.

Vendor evaluations will be conducted by means of procedures or checklists which identify applicable regulatory or code quality assurance requirements when a code or regulatory requirement is

imposed. The evaluation will consist of an evaluation of past experience or written descriptive material which describes the vendor's manufacturing capability and quality assurance program and/or an inspection of the vendor facility by the evaluation team for the organization, program, and capabilities.

Operational Quality Assurance and Generation Engineering document their results in a joint report which discusses areas investigated, results, and conclusions. If satisfactory, the vendor is added to the approved vendors list. Concurrence of both Generation Engineering and Operational Quality Assurance is required to place a vendor on the approved vendor list and either one is authorized to remove a vendor from the list without concurrence of the other. To remain on the approved vendor list, the vendor must be evaluated at least once every five years. Additional reviews are conducted as desired by the Operational Quality Assurance staff based on necessity.

B. Vendor Surveillance

Operational Quality Assurance is responsible for determining and documenting the degree of vendor surveillance (including review, inspection, or audit) required during design, fabrication, inspection, testing and shipping, and for providing the required surveillance. The objective of vendor surveillance is to provide a sampling review of the vendor's Quality Assurance Program implementation and of product conformance with respect to the purchase order requirements. For complex equipment and designs, Operational Quality Assurance and Generation Engineering are responsible for joint development of surveillance plans which will identify areas to be reviewed in advance of surveillance trips.

The results of the surveillance trip will be documented by means of inspection sheets and a trip report which will be distributed to the Manager-Operational Quality Assurance, the vendor, and the Manager-Generation Engineering or the Station Superintendent as applicable. When a deviation from purchase order requirements is noted, the Operational Quality Assurance representative has the authority to inform the vendor that a particular item is unacceptable to Metropolitan Edison Company and will issue a nonconformance report.

The Quality Control Supervisor is responsible for surveillance of site contractors to assure that they meet all technical and quality assurance/quality control requirements. This surveillance is performed in accordance with written procedures and/or checklists. The reporting and documenting of surveillance is managed in a similar manner as vendor surveillance.

Vendor surveillance is conducted using the same techniques as delineated in Section XVIII (Audits) of this Plan. Operational Quality Assurance maintains a file of all vendor surveillance reports. The results of these reports are used by Operational Quality Assurance in determining vendor surveillance frequencies and continued vendor qualification status.

C. Receipt Inspection

The Station Superintendent is responsible for receiving and storing materials, parts, and components. Upon arrival, the plant storekeeper logs the item on the call sheet, places it in the "hold" area, and notifies the Quality Control Supervisor that the item has arrived.

The site Quality Control Supervisor is responsible for receipt inspection in accordance with this plan of material, equipment and associated services for maintenance, repair, and modifications upon delivery at the plant site. This inspection shall include the use of written procedures and checklists to verify that the material, equipment, and services conform to the procurement documents (if this has not been performed by source inspections) and that documentary evidence of conformance is available at the station prior to installation or use.

Documentary evidence sufficient to identifying the codes, standards, or specifications met by the purchased material, equipment, and services shall be retained. In the event a final source inspection was conducted by Operational Quality Assurance prior to the arrival at the site, the site Warehouse Supervisor performs an inspection for shipping damage or lost parts and a document check to ensure that he either has the proper documentation or a notification from the Manager-Operational Quality Assurance that the required documentation has been reviewed and is adequate. The receiving inspection report is prepared for all items received to document the extent of the inspection performed, including the documents checked, and the inspection results.

Once satisfied that the item and documentation are adequate, the Quality Control Supervisor labels the item as "Accepted," files the documentation and receipt inspection results, and informs the storekeeper. If the item is nonconforming or the documentation is not adequate, the Quality Control Supervisor labels the item as "Nonconforming," logs the results in the receipt inspection report, prepares a nonconformance report, files all documents including the receipt inspection report and nonconformance report, reports the nonconformance to the Station Superintendent, the Manager-Operational Quality Assurance and the purchase order originator, and informs the storekeeper. All nonconformances must be resolved to the satisfaction of the purchase requisition originator, Operational Quality Assurance, and the Station Superintendent; in addition, Generation Engineering approval is required if there is any deviation to any approved generation engineering specification or drawing.

If the nonconformance is resolved by correcting the item or documentation to conform to the requirements, the item is then labeled "Accepted" and the corrective action documentation and amended receipt inspection report is filed with the original documentation. If the item is rejected, it will be either downgraded or disposed of as appropriate and the documentation made to show the disposition. If used as is, the documentation will reflect this fact and include justification for the action and the item will be accepted.

On a case basis, nonconforming items may be released from stores for "installation but not operation" by either the Manager-Operational Quality Assurance or the Quality Control Supervisor. Under this condition, a system, component, part or material cannot be made operational or returned to operation, until all non-conformances resulting from the receipt inspections are resolved in accordance with the Nonconformance and corrective Action Documents section of Appendix D of this plan.

In the event traceability of an item is lost the item becomes nonconforming and is controlled as such until traceability is reestablished.

D. Receiving Test Inspection

An alternate means of control of purchased material, equipment and services is to perform adequate tests and inspections, on receipt to demonstrate specification compliance. For example, if a specification for metal requires chemical and physical certifications, these certifications may be established by tracing this material to its heat number and obtaining the certifications for that heat or upon delivery, samples of the metal may be taken and chemical and physical certification tests made by a testing lab. When procuring pressure switches, tests such as set point accuracy, drift rates, and repeatability may be part of the specification. If so, the required tests could be performed by the supplier or the same tests could be performed as part of a receiving test inspection.

The performance of receipt test inspections is accomplished in accordance with specification requirements, codes, standards, etc. and would be used to verify vendor results and/or to alleviate some or all of the vendor selection and/or surveillance requirements. In the event the quality of a product and its conformance to an approved specification can be established by means of a receipt test inspection, it may not be necessary to qualify and/or surveil the vendor.

The Manager-Operational Quality Assurance is responsible for ensuring that receiving test inspections are performed by qualified personnel using approved procedures or methods and surveilling for proper test inspection performance. He is further responsible for reviewing and approving the use of receipt test inspections in lieu of vendor qualification and surveillance.

Notes:

1. For further detail on nonconformances refer to Section XV (Nonconformances) in this Plan.
2. Materials manufactured by Jersey Central Power & Light Company are subject to controls similar to those required for purchased items in this section.
3. For fuel, the Manager-Nuclear Generating Stations is responsible for ensuring proper management of the technical aspects involving vendors.

VIII. Identification and Control of Materials, Parts, and Components

The identification and control of materials, parts, and components is accomplished in accordance with written requirements and applies to material, parts or components in any stage of fabrication, storage, or installation. Identification and control requirements are established by either an existing procedure or requirements which are established during the planning stages of a project. The identification and control requirements cover items such as: traceability to associated documents such as drawings, specifications, purchase orders, manufacturing test data and inspection documents, and physical and chemical mill test reports; specification of the degree of identification and control necessary; location and method of identification to preclude a degradation of the item's functional capability or quality; and the proper identification of materials, parts, and components prior to release for manufacturing, shipping, construction, and installation.

The Manager-Generation Engineering is responsible for ensuring that procurement documents contain appropriate requirements for the identification and control of materials, parts, or components (heat number, part number, serial numbers, drawing identification numbers, etc.). The procedures implementing the specific procurement document requirements are the responsibility of the contractor supplying the item. In the event that more than one contractor or organization (including the Metropolitan Edison Company) is involved in procurement and installation, the Manager-Generation Engineering is responsible for ensuring that the procurement documents and installation requirements provide for a continuity of material identity control. The Manager-Operational Quality Assurance is responsible for quality assurance review and concurrence with procurement and installation documents and, therefore, identification and control requirements. The Manager-Operational Quality Assurance is also responsible for review, inspection, surveillance, and audit of the contractor quality assurance program and compliance to procurement documents and, therefore, identification and control procedures.

The Station Superintendent is responsible for maintaining identification and control of materials, parts, or components received, stored, installed, and used at the station site. Procedures covering the identification and control of materials, parts, and components are prepared and reviewed by the station staff and approved by the Plant Superintendent. These procedures will be reviewed and concurred with by the Quality Control Supervisor for compliance with this Quality Assurance Plan. The Quality Control Supervisor is responsible for surveillance and audit of the implementation of these procedures by the station staff and by contractors performing work at the station.

In the event that traceability is lost for a specific item, it will be handled as nonconforming material and treated in accordance with Section XV (Nonconformances) of this Plan.

In the case of fuel, the Manager-Generation Engineering is responsible for ensuring proper management of procurement documents which includes requirements for identification and control of materials, parts, and components.

IX. Control of Special Processes

For work performed by vendors or by Metropolitan Edison Company, written procedures are established and qualified, as required, for special processes, such as welding, heat treating, cleaning, and nondestructive examination (NDE) to ensure compliance with applicable codes, standards, design specifications, and vendor's requirements. When special processes and qualification requirements are not included in existing codes and standards, they are described in procedures which give details of the special process, the personnel qualification requirements, the equipment necessary, and the special process qualification requirements.

The Manager-Generation Engineering, the Manager-Generation Maintenance, and the Station Superintendent are responsible for requiring vendors, in procurement documents, to control special processes in accordance with the above requirements. The Manager-Operational Quality Assurance is responsible for quality assurance review and concurrence of procurement documents including review of requirements for control of special processes.

As described above, it is required that special processes be performed in accordance with written procedures. The following reviews and approvals are required for special process procedures submitted by vendors in accordance with procurement document requirements and for all Metropolitan Edison Company special process procedures:

1. Special process procedures other than nondestructive examination procedures are reviewed for concurrence with quality assurance requirements by Operational Quality Assurance and approved by the Manager-Generation Engineering or Manager-Generation Maintenance, as appropriate.
2. Nondestructive examination procedures are approved by the Manager-Operational Quality Assurance. However, if required by applicable codes or standards, he also ensures that the procedures are approved by formally qualified examiners prior to granting his approval.

The Manager-Generation Maintenance and the Station Maintenance Supervisor are responsible for ensuring the personnel performing special processes under their cognizance are qualified and are using qualified procedures in accordance with applicable codes, specifications, and standards. The Manager-Operational Quality Assurance is responsible for the qualifications of NDE personnel and procedures. The Manager-Generation Maintenance, Station Maintenance Supervisor, and the Manager-Operational Quality Assurance maintain records for their personnel and their procedures to demonstrate that required qualifications have been obtained and are maintained current.

The site Operational Quality Assurance staff performs surveillance, inspections, and audits of special processes performed by the plant staff or site contractors to ensure compliance with procedures.

NOTE: In the case of fuel, the Manager-Generation Engineering is responsible for ensuring proper management of fuel procurement documents and therefore for providing requirements for special process control in procurement documents.

The Manager-Operational Quality Assurance is responsible for quality assurance review and concurrence of procurement specifications and installation requirements which include inspection requirements. The station Quality Control Supervisor is responsible for Quality Assurance review of station maintenance, repair, modification and operational test procedures for inclusion of inspection requirements. He is also responsible for review and inspection of modifications prior to start-up for compliance with quality assurance requirements.

XII. Control of Measuring and Test Equipment

The following requirements for the control of measuring and test equipment apply to the station staff and vendors:

1. The calibration and control of measuring and test equipment includes calibration techniques, calibration frequencies, and maintenance and control requirements of measuring and test instruments, tools, gauges, fixtures, reference standards, transfer standards, and nondestructive test equipment which are to be used in the measurement, inspection, and monitoring of components, systems, and structures. Establishing calibration techniques includes specifying step-by-step methods for calibration and specifying instrument accuracy requirements. Required calibration frequency is based on required accuracy, degree of usage, stability characteristics, manufacturer's recommendations, experience, and other conditions affecting measurement capability. Maintenance includes preventive and corrective maintenance performed on the equipment.
2. Control of measuring of test equipment requires: a recall system assuring timely calibration of equipment; a system providing unique identification of equipment, traceability to calibration test data and identification of the next calibration date on the equipment; a system providing traceability of referenced standards to recognized body of Standards and periodic revalidation of reference standards; a system providing for records to be maintained which indicate the complete status of all items under the calibration system including the maintenance, calibration results, abnormalities, and last and future calibration dates; and a system controlling the purchase requirements and acceptance tests of new equipment to be entered into the calibration and control system including requirements for accuracy, stability, and repeatability under normal use conditions. In the event a measuring instrument is found out of calibration, an investigation will be conducted to determine the validity of previous measurements.

The Station Superintendent is responsible for the procedures and program required to assure control, calibration, and testing of measuring and test equipment at TMI Nuclear Generating Station Unit 1 in accordance with the above requirements. Instruments specified in the Technical Specifications, Section 4.1, are periodically checked, calibrated, and tested in accordance with written maintenance procedures. Tools, gauges, and instruments necessary for maintenance, inspections, and tests are calibrated and controlled in accordance with station maintenance procedures. Measuring, test, or inspection equipment used by the site Operational

Quality Assurance Staff is included in the station procedures. The Station Superintendent is responsible for requiring calibration and control requirements on measuring and test equipment in procurement documents which he issues.

In the preparation of procurement documents, the Manager-Generation Engineering is responsible for ensuring that appropriate calibration requirements which are consistent with the requirements described in this section are included in procurement documents.

XIII. Handling, Storage, and Shipping

The Station Superintendent is responsible for developing and implementing general station procedures for the handling, storage, shipping, preservation, and cleaning of material and equipment delivered to or located at Three Mile Island Nuclear Generating Station Unit 1. Under normal circumstances, the manufacturer's specific written instructions and recommendations along with purchase specification requirements (where applicable) will be invoked on cleanliness, preservation, special handling, and storage with respect to environmental requirements. In the absence of, or in addition to, specific manufacturer requirements, the Station Superintendent may invoke additional requirements in accordance with the station procedures.

The Manager-Generation Engineering is responsible for specifying in the procurement documents and in modification requirement documents that written procedures be used as appropriate for the handling, shipping, storage, cleaning and preservation of materials and equipment procured for modifications. These procedures will be prepared by contractors or by the station staff as appropriate. Procedures not involving the station stores facility will be reviewed and approved by the Manager-Generation Engineering when so specified in the procurement or requirements documents. Procedures involving the station stores facilities will be reviewed and approved by the Station Superintendent. They will also be approved by Manager-Generation Engineering when so specified in the requirement documents.

In the preparation of documents, including procurement documents, station requirement documents, contractor procedures, station procedures, etc., consideration of handling, shipping, storage, cleanliness, and preservation is given to all material and equipment throughout various stages of manufacturing and installation prior to operational acceptance.

The Manager-Operational Quality Assurance is responsible for review and concurrence of pertinent documents and procedures to assure that proper handling, storing and shipping requirements have been specified. He is further responsible for ensuring proper implementation of handling, shipping, and storage requirements required of vendors. The Quality Control Supervisor is responsible for review and surveillance of handling, storage, and shipping of materials and equipment by vendors, the station staff and contractors.

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XIV. Inspection, Test, and Operating Status

All items received at the station, which require identification and control in accordance with the Quality Assurance Systems List, will be identified and controlled in accordance with the Operational Quality Assurance procedure titled, "Receipt Inspection of Material & Equipment", until installed in the station. This procedure defines the appropriate identification and control requirements such as: identification by means of stamps, tags, labels, routing cards, or other suitable means as appropriate; requirements for segregation during storage; procedures for maintaining identification and traceability to manufacturer and receipt inspection documentation; and a procedure for identifying the status of the item with respect to release for use. In general, an item (not actually installed in a system) requiring control and identification will be positively marked with respect to traceability requirements and whether it is suitable for use. In the event the traceability is lost or destroyed, the item will be considered non-conforming until otherwise identified. The Manager-Operational Quality Assurance will insure the Identification and Control of Materials, Parts and Components Procedure is written, implemented, and audited by his staff and will also have the approval and change authority for that procedure. The Station Superintendent is responsible for implementing storage requirements and insuring that his personnel abide by the identification and control procedures.

The Station Superintendent is responsible for the station procedures relating to the operational status of the entire station. These procedures indicate by use of markings, logs, or other suitable means the test or operational status of all nuclear safety-related systems and their components when in other than normal status.

Procedures require that a tagout sheet, for each tagout be approved by the on-duty foreman prior to tagging the system out; that sufficient tags be used to isolate and render the system inoperable from all points (including lockouts if necessary); that the person or persons tagging the system verify documentation of tag placement in the tagout log; that weekly audits of the tagout log be performed to verify its accuracy; and that a review of the equipment status be performed by the relieving and relieved foreman at shift relief. In addition, no system will be tagged out, worked on, or untagged without the express consent of the foreman.

The above procedures are written, reviewed, concurred with and approved in accordance with this Plan.

Items removed from a plant system, if they are to be replaced or stored, will be identified and controlled in accordance with the quality assurance procedure, "Receipt Inspection of Material and Equipment." In general, no item may be placed back into a controlled system without meeting the same type of identification and control requirements as a replacement part. An item which is removed and stored must meet similar identification and control requirements as an item received at the site. If the item is to be no longer used, no control or identification is required.

The Station Superintendent is responsible for the establishment, implementation and approval of surveillance test schedules which reflect Technical Specification requirements and any other regulatory requirements. He will also be responsible for accurate and complete documentation of all tests, inspections, and checks completed. The Quality Control Supervisor will review and audit the schedules for completeness and accomplishment at intervals consistent with the inspection or test interval.

Tests and inspections required as a result of repair, modification, or maintenance will be conducted in accordance with specifications, maintenance procedures, etc. The procedures for performing the work will require sign off on travelers or similar documents to assure that required inspections and tests are performed. The procedures will be prepared and approved by the responsible organization as defined by station procedures, specifications, Operational Quality Assurance procedures, etc. and will be reviewed and audited by Operational Quality Assurance. All required documentation will be maintained in accordance with document control practices.

XVI. Corrective Action

Generation Division Procedures establish requirements for controlling nonconformances and obtaining corrective action as described in Section XV of this Plan.

Each Manager and the Station Superintendent are responsible for preparing, reviewing, approving, and implementing their own procedures for corrective action consistent with the Operating Quality Assurance Plan and in conjunction with the nonconformance procedures described in Section XV. The corrective action procedures include provisions for the evaluation of nonconformances, the determination of suitable corrective action, the responsibility for timely disposition and followup action for nonconformances, the authority for approval of proposed corrective action, and the required corrective action documentation. An evaluation of a nonconformance includes consideration of the cause, other areas which could experience similar nonconformances, and solutions that reduce the probability of a repetition of the nonconformance.

The Station Superintendent is responsible for ensuring that nonconformances are corrected for station activities involving operation, maintenance, repair, health physics, environmental monitoring, fuel handling at the station, and inservice inspection. Unit items such as failures, malfunctions, deficiencies, deviations and defective material, parts or components are handled in a manner consistent with their importance to safety and reviewed in accordance with Station procedures and the Technical Specifications, Sections 15.6.3 and 15.6.4. The Station Superintendent is also responsible for requiring, in procurement documents, that site contractors involved in maintenance and repair prepare procedures including provisions for nonconformances and corrective action in accordance with this Operational Quality Assurance Plan. In addition, procurement documents require that contractors report nonconformances to Metropolitan Edison Company for concurrence on corrective action.

The Manager-Generation Engineering is responsible for requiring, in procurement documents, that contractors involved in station modifications prepare procedures which require that nonconformances be promptly identified, corrected, documented, and reported to Metropolitan Edison Company for concurrence. Further, the Manager-Generation Engineering is responsible for ensuring that nonconformances within Generation Engineering are documented, and corrected. He is also responsible for ensuring that contractors performing fuel design and procurement functions prepare procedures which require that any nonconformances be promptly identified, corrected, documented, and reported to Metropolitan Edison Company for concurrence.

The Manager-Generating Stations is responsible for ensuring that nonconformances within the Generating Station Staff are documented and corrected.

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The Manager-Operational Quality Assurance is responsible for ensuring that nonconformances are identified, documented, and corrected within the Operational Quality Assurance Staff. He is further responsible for the development of procedures for the performance of quality assurance reviews, surveillances, inspections, and audits. These procedures include provisions for the identification of problems and deficiencies, for ensuring that responsible personnel are notified of nonconformances, and for reaudits or inspections to assure that corrective action and documentation are accomplished.

XVII. Quality Assurance Records

The Vice President-Generation is responsible for establishing quality assurance record preparation and maintenance requirements utilizing ANSI N45.2.9-1973 Draft 11 for guidance in the Operational Quality Assurance Plan. Each Manager and the Station Superintendent are responsible for preparation, review, approval by himself, and implementation of specific Quality Assurance Record Procedures for their areas of responsibility in accordance with the Operational Quality Assurance Plan. The records which fall within the quality assurance record requirements include those records required by the Technical Specifications, Section 15.6.5 and ANSI 45.2.9-1973 Draft 11 (Requirements for Collection, Storage, and Maintenance of Quality Assurance Records for Nuclear Power Plants).

The requirements and responsibilities for record transmittal are in accordance with document control procedures as described in Section VI of this Plan. Requirements and responsibilities for preparation, inspection, identification, review, storage, retrieval, maintenance, and retention period of quality assurance records will be in accordance with the applicable quality assurance record procedures, codes, standards, procurement documents, and applicable parts of this Quality Assurance Plan.

Record storage facilities are in accordance with ANSI N 45.2.9-1973 Draft 11.

The Station Superintendent is responsible for maintaining plant operating records as required in the Technical Specifications. In addition, he is responsible for maintaining inservice inspection records, special test records, Plant Operations Review Committee Minutes, and General Office Review Board Minutes.

The Manager-Generation Engineering is responsible for providing and implementing procedures for the preparation and maintenance of design records such as specifications, design reports, as-built drawings, etc.

The Manager-Operational Quality Assurance is responsible for providing procedures which ensure the maintenance of records (other than design records and plant operating records) sufficient to furnish objective evidence of activities affecting quality utilizing ANSI N45.2.9-1973 Draft 11 for guidance. He is also responsible for ensuring the Operational Quality Assurance Staff reviews, concurs with, and audits all Quality Assurance Records Procedures.

Due to the difference in the above requirements and previous record requirements, the possibility exists that it will be impossible to produce all records, in accordance with this plan, for events that occurred prior to the implementation of this plan. For this reason, it is planned to maintain the existing records and employ the guidelines of the Operating Quality Assurance Plan in the future.

XV. Nonconformances

Nonconformances, as discussed herein, include both hardware problems involving materials, parts, components or systems which do not comply with licensing, codes, specification or drawing requirements, and non-hardware problems such as failure to comply with the operating license, Technical Specifications, procedures, regulations, etc. with respect to test, operations, etc.

The requirements for identification, reporting, segregation, disposition, and management review of nonconformances are included in the implementing procedures. The procedures (e.g. audits, receiving inspection, nonconforming station equipment, etc.) provide detailed instructions for controlling nonconformances.

It is the responsibility of anyone who detects a nonconformance to report it in accordance with the nonconformance procedure that is applicable to his part of the organization. Each Manager and the Station Superintendent are responsible for ensuring that nonconformance procedures (covering the types of nonconformances affecting his staff) are written, reviewed, approved by themselves, and implemented by their staff. Each procedure describes the specific methods for recording, identifying and segregating nonconformances, notifying affected organizations, assigning specific responsibility for corrective action, requiring followup action to ensure corrective action is accomplished, and documenting all aspects of the nonconformance including its disposition, and signature approvals of the disposition.

The Manager-Operational Quality Assurance is responsible for identification and resolution of nonconformances within the Operational Quality Assurance organization. The Manager-Operational Quality Assurance is also responsible for ensuring that nonconformances, which are identified by means of quality assurance staff inspections or audits, are resolved in accordance with Quality Assurance organization nonconformance and audit procedures. In regard to surveillance, inspection, and audits of vendors, these procedures require nonconformances to be documented, vendor management to be notified so that corrective action is taken, and followup of the nonconformances by quality assurance personnel to insure that satisfactory resolution is implemented.

In regard to nonconformances noted in connection with receipt inspections or work at the site, the Manager-Operational Quality Assurance is responsible for approving procedures which control nonconforming materials, parts, or components prior to installation and system turnover to prevent their inadvertent use in station modification, maintenance, or repair. These procedures require that nonconforming items found during the receipt inspections or checks of modification, maintenance or repair work be clearly identified and documented and that supervision and management be notified so that appropriate corrective action can be taken. The Quality Control Supervisor is responsible for the implementation of these procedures and for the documentation on disposition of nonconforming items. He maintains a central file of the above nonconforming items with the status of corrective action on each item and ensures that timely

XVIII. Audits

The Manager-Operational Quality Assurance is responsible for a system of planned and periodic audits to verify compliance with all aspects of the operating Quality Assurance Program; in this regard he maintains and up-dates, at least every six months, a formal schedule for these audits. In general, each element of the Operational Quality Assurance Program, such as design control, document control, etc., and each area of plant operations, such as normal operations, inservice inspection, refueling, radiological controls, etc., is given a comprehensive audit once every two years. Functions that are performed on a routine, scheduled basis, such as preventive maintenance, calibration, etc., are audited for compliance on a frequency determined by the cycle length. Audits are normally scheduled as required for special evolutions, such as major modifications. In addition, unscheduled audits may be conducted in any area from time to time on any aspect of 10CFR50 Appendix B or this Operational Quality Assurance Program. When functioning within the scope of the Operational Quality Assurance Program, both Metropolitan Edison Company and organizations providing goods and/or services are subject to the appropriate requirements of this program and thus, audits. Audits that are conducted on organizations within Metropolitan Edison Company are designated as internal audits and audits conducted on all other organizations are designated as external audits.

As described in Section I (Organization) of this Plan, the Manager-Operational Quality Assurance has the authority and organizational freedom to schedule and perform both internal and external audits as well as provide and/or ensure corrective action.

Audits are conducted using a written and documented plan in accordance with audit procedures. Audits include (as required) but are not limited to evaluation of work areas, activities, processes, goods, services, and the review of documents and records for quality-related practices, procedures, and instructions to determine the effectiveness of the implementation of this Quality Assurance Program and compliance with 10CFR50 Appendix B. For the performance of audits, an audit team (consisting of one or more qualified persons) is selected. A designated leader is assigned to be responsible (as required) for the written plan (including checklists), team orientation, audit notification, audit performance, postaudit conference, reporting, records, and for followup audits when deemed necessary. The audit team may include Metropolitan Edison Company Operational Quality Assurance personnel and/or other personnel in organizations within or outside the Metropolitan Edison Company. The audit team is structured in a manner to preclude the auditor from having direct responsibility for the area which he is auditing. On occasion, the audit team may have members from the audited organization; however, they shall not audit activities for which they have direct responsibility and while performing the audit, they are directly responsible to the audit team leader.

B. Generation Maintenance Staff

1. Document Control
2. Training
3. Procurement Control
4. Maintenance Control (includes Maintenance, Modification, and Repair)
5. Nonconformance/Corrective Action Control
6. Special Process Control (Welding, Heat Treating, etc.)

C. Generating Station Staff

1. Document Control
2. Training
3. Procurement Control
4. Nonconformance/Corrective Action Control

D. Operational Quality Assurance Staff

1. Audit Control
2. Document Control
3. Training
4. Nonconformance/Corrective Action Control
5. Vendor Surveillance and Inspection

II. Plant

A. TMI Nuclear Station Unit 1 Staff

1. Procedure/Technical Specification Compliance with respect to:
 - a. Administrative Functions
 - b. Fuel Handling
 - c. Operations
 - d. Maintenance, Repair, Modification
 - e. Design
 - f. Health Physics/Chemistry
 - g. Environmental Monitoring
 - h. Inservice Inspection
 - i. Surveillance Testing
2. Document Control
3. Nonconformance/Corrective Action
4. Training
5. Procurement Control
6. Material Handling, Storing, Issuing, Cleaning, Preserving, Shipping Control
7. Calibration
8. Emergency Plan

B. On-site Operational Quality Assurance Staff

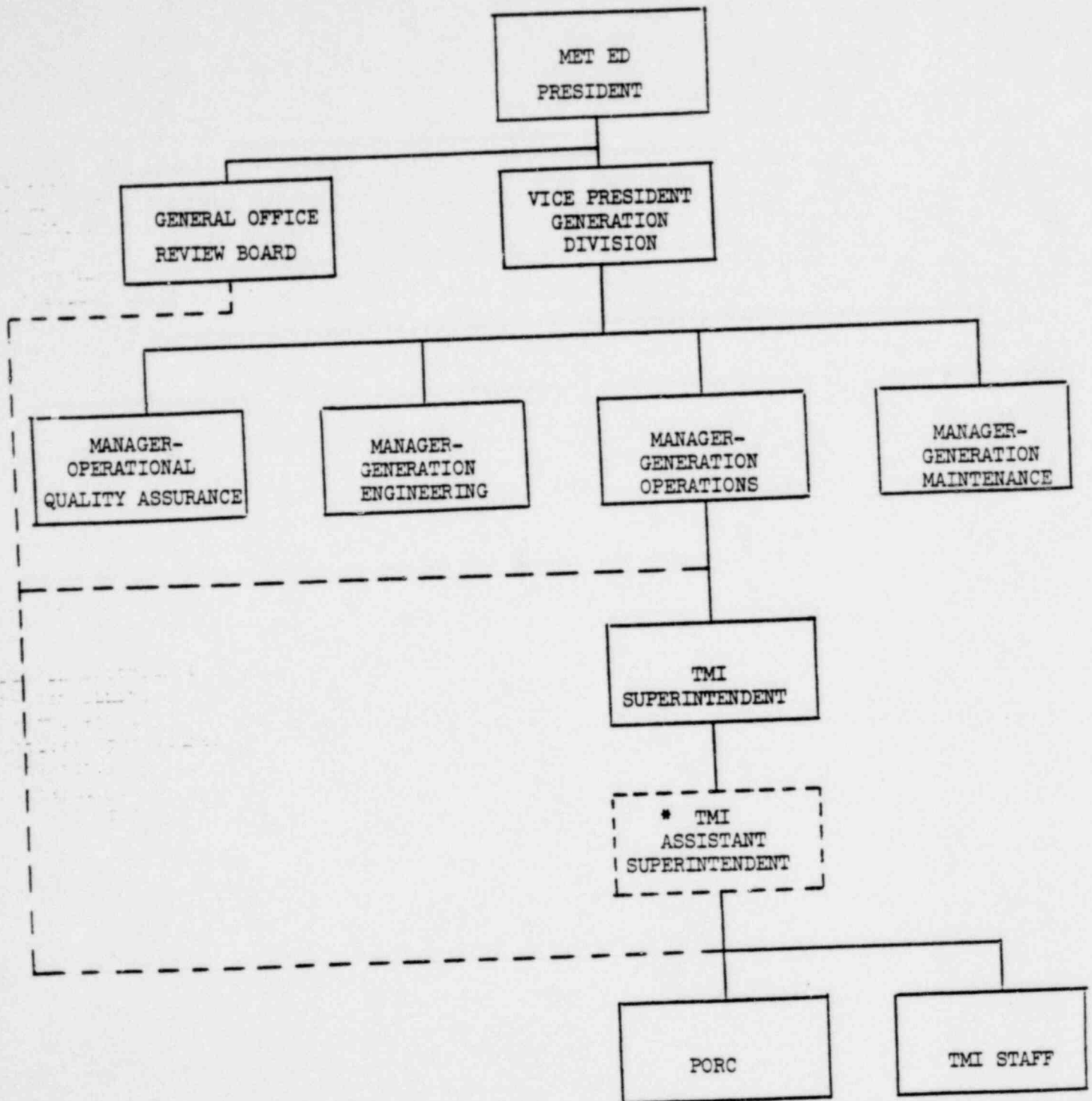
1. Document Control
2. Nonconformance/Corrective Action Control
3. Training
4. Audit Control
5. Receiving Inspection Control
6. Plant Inspection Control
7. Site Contractor Surveillance Control

III. Audit of the Plant Operations Review Committee (PORC) and General Office Review Board (GORB)

IV. Audit of Major Contractors, Subcontractors, and Vendors during Commercial Operations

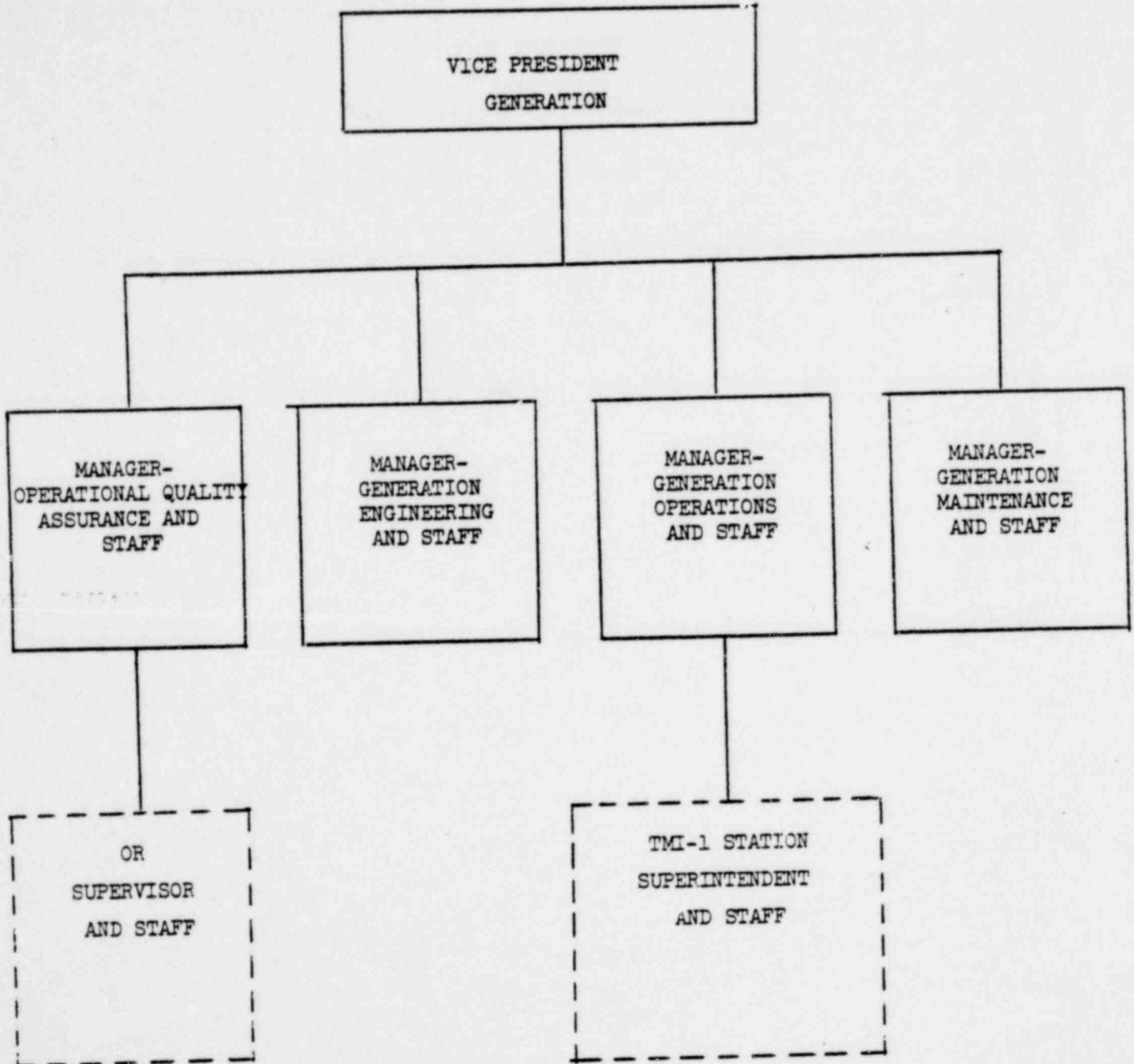
- A. During the early stages of design and procurement, as required, to evaluate their Quality Assurance Program for compliance with all aspects of the procurement documents;
- B. As required, to ensure that major contractors, subcontractors, and vendors are auditing their suppliers for Quality Assurance Programs in accordance with procurement documents;
- C. During the project, as required to assure all required Quality Assurance Programs are properly implemented and applied in accordance with procurement documents.

Figure 1
 Organization Chart
 Three Mile Island Nuclear Station Unit 1



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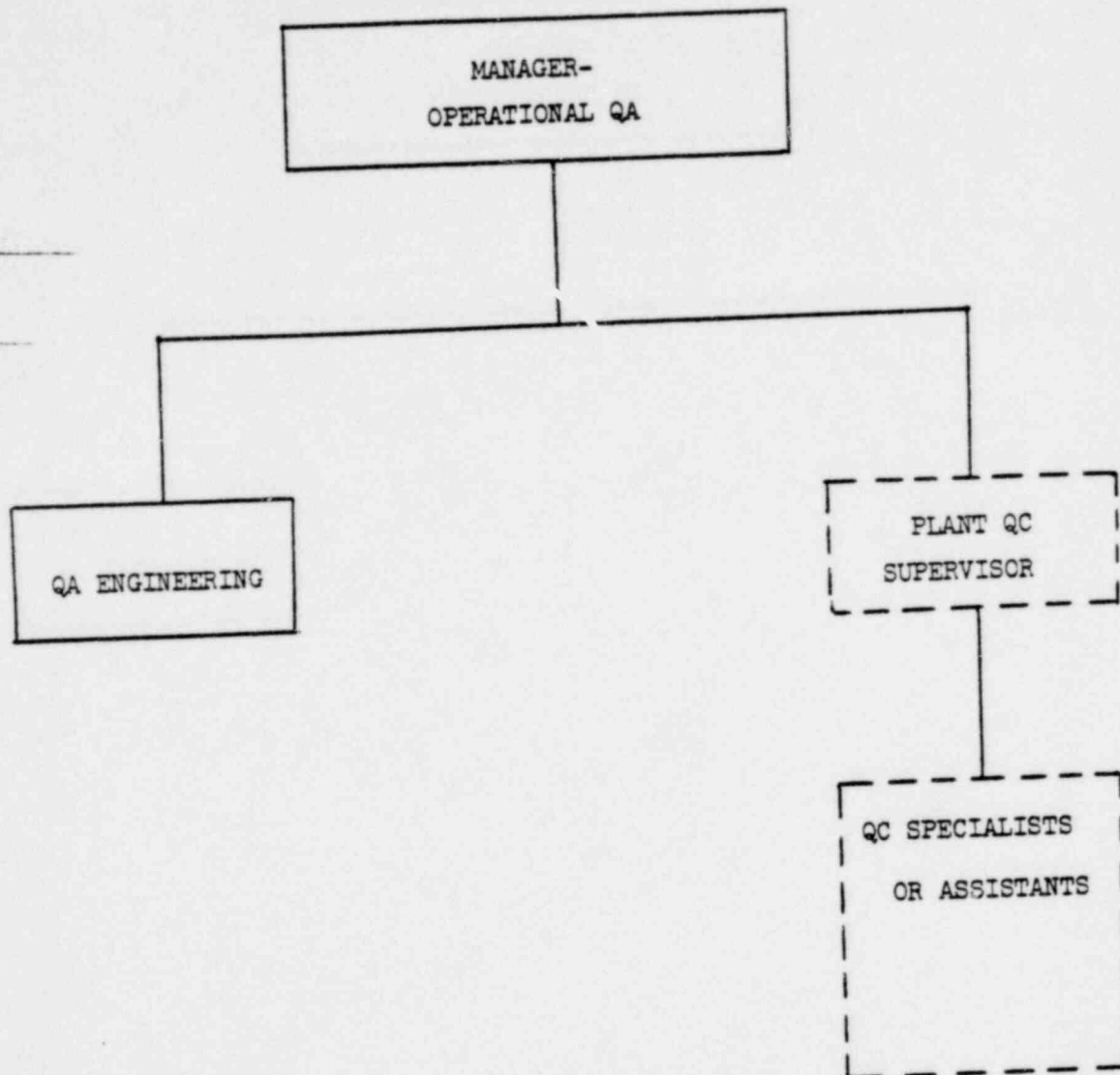
FIGURE 2
ORGANIZATION OF GENERATION DIVISION



--- LOCATED AT PLANT SITE

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FIGURE 3
ORGANIZATION OF QA STAFF



--- LOCATED AT PLANT SITE

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FIGURE 4

ORGANIZATION OF GENERATION ENGINEERING STAFF

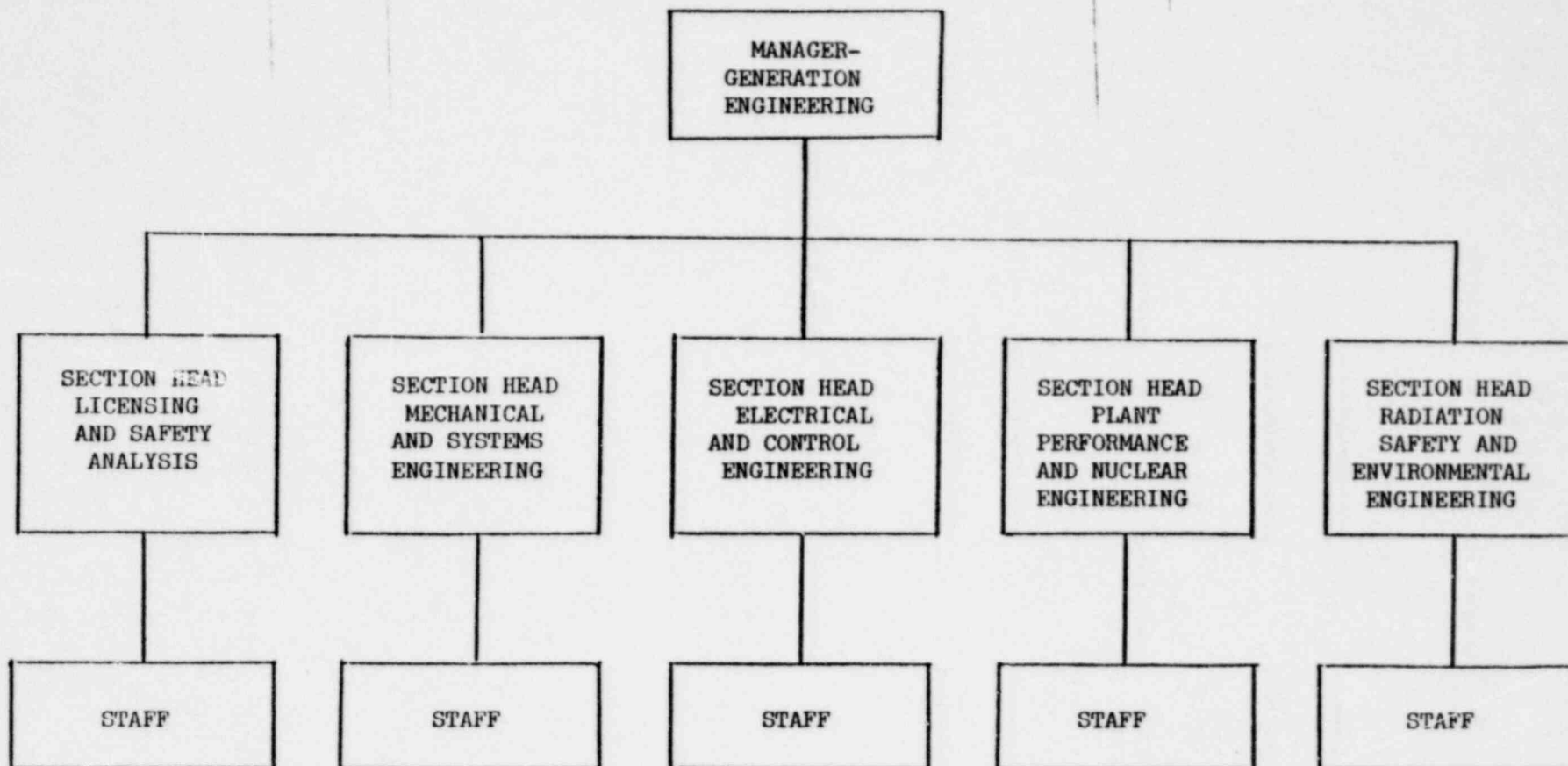
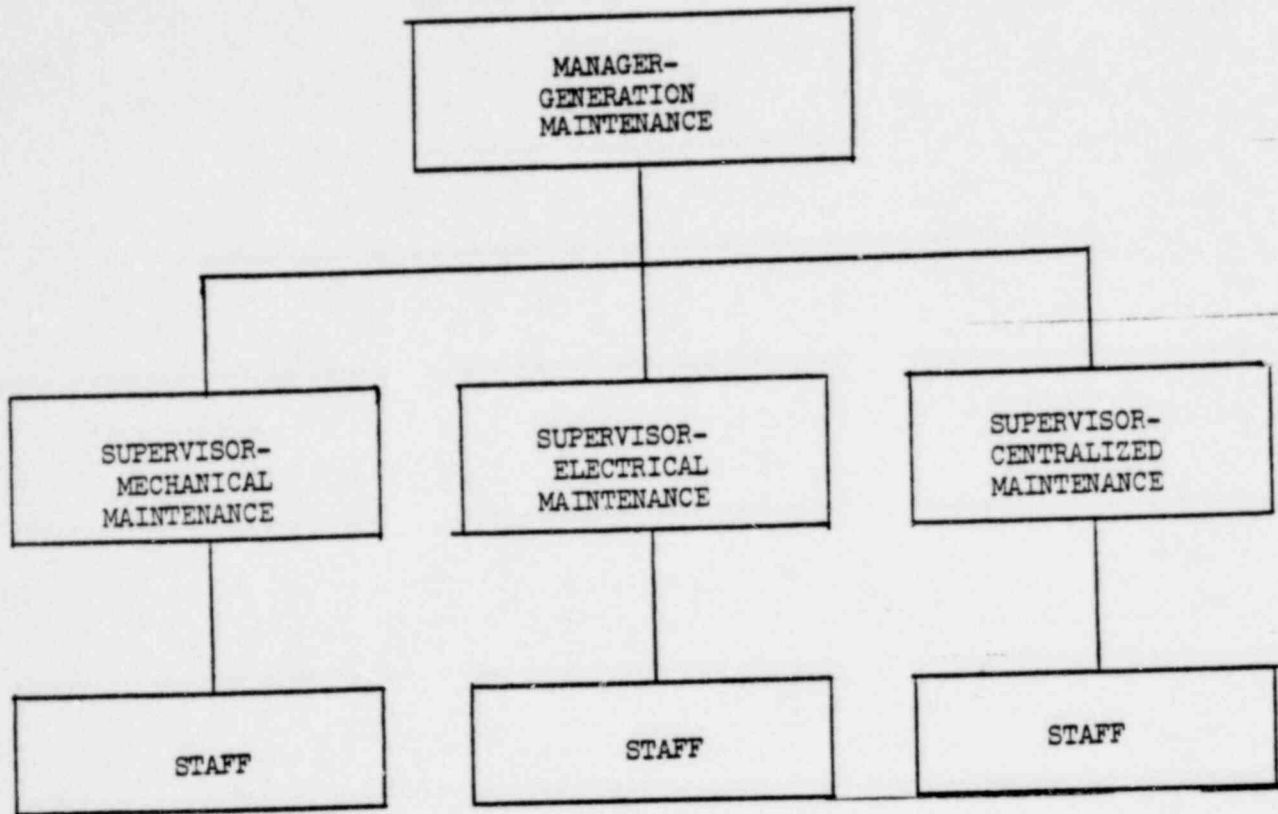


FIGURE 5

ORGANIZATION OF GENERATION MAINTENANCE STAFF



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SUMMARY

QUALITY ASSURANCE

SYSTEMS LIST

APPENDIX A

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Appendix A

Summary of Quality Assurance Systems
or Partial Systems Lists

1. Control Building Heating and Ventilation System
2. Fuel Handling/Auxiliary Building Ventilation System
3. Reactor Building Emergency Cooling System
4. Reactor Building Spray System
5. Nuclear Chemical Addition and Sampling System
6. Condensate System
7. Core Flood System
8. Chilled Water System
9. Containment Monitoring System
10. Decay Heat Closed Cycle Cooling Water System
11. Emergency Diesel Generator Fuel System
12. Decay Heat Removal System
13. Decay Heat Water System
14. Emergency Feedwater System
15. Emergency Diesel Generator Services
16. Feedwater System
17. Hydrogen Purge Discharge System
18. Main Steam
19. Make-up and Purification System
20. Nuclear Services Closed Cooling River Water System
21. Nuclear Services Closed Cooling System
22. Penetration Cooling System
23. Reactor Coolant System
24. Control Rod Drive Mechanisms

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25. Reactor Building Emergency River Water System
26. Spent Fuel Cooling System
27. Screen House Ventilation and River Water System
28. Waste Gas System
29. Liquid Waste Disposal System
30. Solid Waste Disposal System
31. Reactor Building Isolation System
32. 4160 & 480V Class IE Distribution System
33. Emergency Diesel Generators
34. 250/125V D.C. System
35. 120V A.C. Vital Instrumentation Distribution System
36. Reactor Protection System
37. Engineered Safeguards Actuation Systems

38. Air Intake Structure
39. Auxiliary Building

40. Fuel Handling Building
41. Control Building
42. Diesel Generator Building
43. Intermediate Building
44. Reactor Building
45. Intake Screen and Pump House
46. Nuclear Instrumentation and In-Core Monitoring System
47. Radiation Monitoring

QUALITY ASSURANCE PROGRAM
PROCEDURES CATAGORIES AND APPROVALS
APPENDIX B

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APPENDIX B - QUALITY ASSURANCE PROGRAM

PROCEDURE CATEGORIES AND APPROVALS

PROCEDURE	SUBJECTS COVERED	PREPARED BY	REVIEWED BY	QUALITY ASSURANCE CONCURRENCE REQUIRED	APPROVED BY	ISSUED BY
I <u>Generation Div.</u> Generation Div. Procedures	Activities which affect several groups within the Generation Div. and which should be controlled in a uniform manner. Examples: Organization, duties, and responsibilities of Gen. Div. personnel.	As assigned by V.P. Generation	Generation Div. Managers	Manager-Operational Quality Assurance	V.P. Generation	V.P. Generation
II <u>Operational QA</u> A. QA Procedures	Home Office QA activities and company wide QA procedures. Examples: Performance of Audits, Vendor Evaluation, Maintenance of QA/QC Records.	Home Office QA Personnel	Home Office QA Personnel - others as appropriate	Manager-Operational Quality Assurance	Manager-Operational QA	Manager-Operational QA
B. Site QA/QC Procedures and Nondestructive Examination Procedures	Site QA/QC activities, e.g., Surveillance of Site Contractors, Surveillance of Plant Operations, Receipt Inspection.	QC Specialists	QC Supervisor - others as appropriate	Manager-Operational Quality Assurance	Manager-Operational QA, Qualified Personnel for NDE Procedures	QC Supervisor
C. Site QA Checklists	Detailed inspections or surveillance to be performed on specific operations, for example, replacement of a valve or a special test.	QC Specialists	QC Specialists - others as appropriate	QC Supervisor	QC Supervisor	QC Supervisor

NOTE: EXCEPT FOR SPECIAL PROCESSES AS DISCUSSED ABOVE, GENERATION MAINTENANCE PERSONNEL, E.G., MOBILE MAINTENANCE CREWS, USE THREE MILE ISLAND PLANT PROCEDURES WHEN THEY PERFORM WORK AT THE PLANT.

PROCEDURE	SUBJECT COVERED	PREPARED BY	REVIEWED BY	QUALITY ASSURANCE CONCURRENCE REQUIRED	APPROVED BY	ISSUED BY
<u>III Nuclear Generating Stations</u>						
A. Staff Administrative Procedures	Home Office Nuclear Generating Station activities such as responding to AEC inquiries, reporting of incidents, etc.	Nuclear Generating Stations Home Staff	Manager-Generating Stations	Manager-Operational QA (procedures required by this QA Plan)	Manager-Generating Stations	Manager-Generating Stations
B. Three Mile Island Plant Procedures	Plant operation, test, maintenance, repair, modification, inservice inspection, health physics, administrative, emergency procedures.	Three Mile Island Plant Staff	Maintenance, Technical, Operations, Health Physics Engineers, as appropriate - Plant Operations Review Committee.	QC Supervisor for plant administrative, maintenance, test, repair, modification, and inservice inspection procedures.	Three Mile Island Superintendent	Three Mile Island Superintendent
C. Environmental Procedures	Plant Environmental procedures	Three Mile Island Plant Staff	Three Mile Island Technical Engineer - Plant Operating Review Committee	NOT REQUIRED	Three Mile Island Superintendent	Three Mile Island Superintendent
<u>IV Generation Engineering</u>						
A. Administrative Procedures	Procedures covering design, procurement, modification and repair activities, e.g., Design Controls, Approval of Modifications, Preparation, Review and Approval of Specifications and Drawings.	Generation Engineering Staff	Staff Engineer, Sr., Section Head	Manager-Operational QA (procedures required by this QA Plan)	Manager-Generation Engineering	Manager-Generation Engineering
B. Modification and Installation Procedures	Procedures giving detailed instructions for making repairs or modifications to the plant.	Generation Engineering Staff	Staff Engineer, Sr.	Operational QA Staff	Manager-Generation Engineering	Manager-Generation Engineering

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PROCEDURE	SUBJECTS COVERED	PREPARED BY	REVIEWED BY	QUALITY ASSURANCE CONCURRENCE REQUIRED	APPROVED BY	ISSUED BY
<u>V Generation Maintenance</u>						
A. Administrative Procedures	Procedures such as Document Control, Personnel Training, Qualification of Procedures and Personnel, Nonconformances and Corrective Action, Organization and Responsibilities, etc.	Generation Maintenance Staff	Centralized, Mechanical and/or Electrical Maintenance Engineers	Manager-Operational QA (for procedures required by QA Plan)	Manager-Generation Maintenance	Manager-Generation Maintenance
B. Special Process Procedures	Procedures for special processes such as welding, brazing, heat treating, etc.	Generation Maintenance Staff	Centralized, Mechanical and/or Electrical Maintenance Engineers	Manager-Operational QA	Manager-Generation Maintenance	Manager-Generation Maintenance
<u>VI Equipment Fabricators, Engineering Services, Site Contractors, etc.</u>						
A. Manufacturing Installation and Special Process Procedures other than Nondestructive Examination.	The procedures required are described in the Metropolitan Edison specifications. The specifications also describe any Metropolitan Edison approvals required of these procedures.	Contractor	Generation Engineering, Generation Maintenance, Operational QA, Generating Stations as appropriate.	Operational QA	Manager-Generation Engineering, Generation Maintenance, Operational QA, Generating Stations as appropriate.	Contractor
B. QA/QC and Nondestructive Examination Procedures	The procedures required are described in the Metropolitan Edison specifications. The specifications also describe any Metropolitan Edison approvals required of these procedures.	Contractor	Operational QA - other as appropriate	Operational QA	Manager-Operational QA, Qualified Personnel for NDE Procedures.	Contractor
C. Maintenance and Repair Procedures	The procedures are described in procurement documents which indicate approvals required.	Contractor	Three Mile Island Plant Staff and/or Generation Maintenance, Plant Operations Review Committee	Operational QA	Plant Superintendent and Manager-Generation Maintenance (when appropriate)	Contractor

PRELIMINARY LIST OF PROCEDURES IMPLEMENTING

THE QUALITY ASSURANCE PROGRAM

APPENDIX C

The enclosed list of procedures is tentative and may change as the Quality Assurance Program is implemented. A change may be reflected in the title or number of procedures but areas discussed in this appendix as well as areas not discussed in this appendix but as required by the Quality Assurance Plan will be implemented by written procedures.

It is not intended to amend this Plan for procedure title or quantity changes.

PRELIMINARY LIST OF PROCEDURES IMPLEMENTING

THE QUALITY ASSURANCE PROGRAM

APPENDIX C

The enclosed list of procedures is tentative and may change as the Quality Assurance Program is implemented. A change may be reflected in the title or number of procedures but areas discussed in this appendix as well as areas not discussed in this appendix but as required by the Quality Assurance Plan will be implemented by written procedures.

It is not intended to ammend this Plan for procedure title or quantity changes.

Appendix C

Preliminary List of Procedures Implementing The Quality Assurance Program

QC Personnel Duties: Authority and Responsibilities

Establishes the authority, responsibilities, and duties of the Metropolitan Edison Company's Quality Control assigned to the Three Mile Island Nuclear Generating Station.

Reporting Requirements

Establishes the requirements for Quality Assurance (QA) and Quality Control (QC) to report to management the quality status of the TMI Station and to summarize quality problems, actions to rectify problems, and actions that are required to rectify problems.

QC Education and Training

Establishes the education and training program for personnel assigned to TMI.

Review of Design Specifications and Documents

Establishes requirements for the review of design specifications and documents to assure that applicable regulatory requirements and the design basis for those structures, systems, and components which are nuclear-safety-related items, are correctly translated into specifications, drawings, procedures, instructions.

Review of Procurement of Documents

Delineates the QA requirements for review of procurement documents prepared for the purchase of material to be utilized for modification or repair of nuclear-safety-related systems or components. The QA review process will insure that applicable regulatory requirements which are necessary to assure adequate product quality are included in the procurement documents.

Guide for the Preparation of QA/QC Procedures and Instructions

Delineates the content and form of QA/QC procedures and instructions contained in the QA Procedure Manual. Also details the steps required to prepare new or revised QC procedures.

Control of QC Procedures

Establishes the requirements and defines the responsibilities for the control of Met-Ed QC Procedures/Instructions and changes thereto.

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Receipt Inspection of
Material and Equipment

Defines the responsibilities of QC in performing the receiving inspection of nuclear-safety-related material and equipment for the TMI Station.

Evaluation of Contractors

Evaluates the QA program of the contractor/subcontractor/supplier of nuclear-safety-related materials.

Inspection and Assessment
of Contractors

Verifies the extent of the implementation of a contractor's QA program for nuclear-safety-related material/service

Audit of Contractors
Quality Documentation

Defines the QC review and audit of objective evidence (documentation) required for nuclear-safety-related materials and services prior to their acceptance or use at the TMI Station.

Inspection and Surveillance
Requirements

Establishes the requirements for inspection and surveillance of the nuclear-safety-related structures, systems and components.

Control and Follow-Up System of
Nonconforming Material, Parts, or Components

Establishes the requirements for a system of control and follow-up action for non-conforming nuclear-safety-related material, parts, or components.

Corrective Action

Describes the corrective actions required for QA/QC audit findings, for QC surveillance findings, or hardware failures.

Retention and Storage of
Quality Control Records

Establishes the requirements for retention of QC records.

Audit Program

Establishes the requirements for a comprehensive system of documented, planned, periodic audits to verify the extent of compliance with all aspects of the Met-Ed Operational program. The audit system also provides for reporting, review, and follow-up action, including the reauditing of deficient areas.

Control of Met-Ed Performed
Special Processes

Assures that adequate control is exercised over the special processes of welding, heat treating, special cleaning processes, nondestructive testing, and acid pickling when such processes are performed by Met-Ed personnel.

Quality Assurance
Systems Lists

Lists for each operating Met-Ed nuclear generating unit those structures, systems, and components which must comply with the requirements of the Met-Ed Operational QA Program and AEC Regulation 10CFR50 Appendix B.

Reporting of Significant
Operating Experiences

Describes administrative action to be followed by all Met-Ed generating facilities in reporting significant operating experiences.

Control of Generation
Engineering Records

Provides requirements for the retention and control of those Generation Engineering Department records which furnish documentary evidence of engineering activities affecting quality.

Control of Vendor
Special Processes

Assures that adequate control is exercised over contractor and/or vendor special processes, such as welding, heat treating, cleaning processes, nondestructive testing, coating processes, plating processes, chemical processes, and surface finishes.

Preparation, Approval, and Revision
of As-Built Drawings

Provides administrative controls for the preparation, approval, and revision of as-built drawings to be applied to all Met-Ed generation stations.

Standard Memoranda

Establishes a versatile form for documentation of activities performed within the Generation Engineering Department.

Control of Generation
Engineering Documents

Prescribes the methods and requirements for the control of the basic engineering documents used by the Generation Engineering Department and plant staff personnel to control engineering activities affecting quality. These documents include Procurement Specifications, Met-Ed Welding Specifications and Procedures, Met-Ed NDT Procedures, Met-Ed Heat-Treating Procedures, and Met-Ed Cleaning Procedures.

Evaluation of Test Results

Establishes the responsibility of the Met-Ed Generation Engineering Department for reviewing and evaluating test reports/results of all tests performed by outside sources, in accordance with purchase documents and specification requirements, or by station personnel for those tests identified by the Generation Engineering Department that must be performed following a modification.

Preparation, Alteration and Issuance of Specifications

Specifies Generation Engineering Department requirements for the preparation, review, and approval of procurement specifications and changes thereto, as they apply to all existing and new specifications.

Evaluation and Corrective Action of Conditions Adverse to Quality

Establishes measures for the evaluation and correction of conditions adverse to quality on work or items under the control of the Generation Engineering Department.

Evaluation of Nonconforming Materials, Parts, and Components

Delineates the methods for handling engineering evaluations of nonconforming materials, parts, and components.

Generation Engineering Indoctrination and Training

Provides the scope and an outline of the training materials to be prepared by the Generation Engineering Department in support of the training program requirements of GP 0007 and assigns responsibility for the preparation of those training materials.

Procurement Document Control

Specifies requirements for the control of procurement documents for materials, parts, components, and services required to perform design, maintenance, repair, modification, testing, refueling, inservice inspection, and/or QA functions in support of Met-Ed nuclear generating stations.

Vendor Evaluation and Selection

Establishes requirements concerning the selection of vendors for the production and supply of nuclear-safety-related items and services.

Origination, Promulgation, and Revision of Generation Division Procedures

Defines the responsibilities of the Generation Division personnel concerning the origination, promulgation, and revision of division, department, and section procedures.

Station Organization and Chain of Command

Defines the on-site organization and the chain-of-command that will be responsible for the operation and maintenance of the TMI Nuclear Generating Station.

Administrative Control of Station Activities

Defines the manner in which the TMI Staff shall accomplish quality objectives in the operations and maintenance of the TMI Station.

TMI Procedure Control

Establishes the requirements and defines the responsibilities for control of all TMI plant procedures and revisions thereto.

Quality Control Warehousing

Provides instruction in the identification and control of nuclear-safety-related materials, parts, and components stored or handled in the TMI warehouse.

Qualification of Personnel Performing Special Processes

Establishes the requirements to assure that special processes are controlled and accomplished by qualified personnel using approved and qualified procedures in accordance with applicable codes, standards, specifications, criteria, and other special requirements.

Cleanliness Requirements

Defines the cleanliness requirements for the operation and maintenance of the TMI Station.

Surveillance Testing Program

Provides directions for department heads, shift supervisors, and testing personnel to aid in the timely performance and documentation of plant surveillance tests.

Control of Post- Maintenance Testing

Establishes the requirements for a post-maintenance test program which will insure that proper operation of nuclear-safety-related systems and components is assured by adequate inspection and testing following maintenance.

Control of Measuring and Test Equipment

Establishes the requirements and defines the responsibilities for the control, calibration, and periodic adjustment of tools, gages, instruments, and other measuring and test equipment used to verify conformance to established requirements of recognized standards.

Test Equipment Recall

Delineates the requirements for establishing and maintaining a system that assures the recall for calibration of all testing and measuring instruments on a scheduled basis.

Locked Valve and Key Control

Establishes the methods used to assure that only authorized personnel have access to controlled areas, rooms, cabinets, and equipment involved in critical operations at the TMI Station.

Operating Records: Shift Relief and Log Entries

Establishes the requirements for recording station operating activities in logs or other controlled documents on a shift basis.

Reports and Notification

Defines the reports and notifications required at TMI.

Control of TMI QC Records

Provides guidelines to the TMI staff for the collection, storage, and maintenance of QA records associated with the operating phase of the TMI Station.

QUALITY ASSURANCE PROGRAM
DOCUMENT CATEGORIES AND APPROVALS

APPENDIX D

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APPENDIX D - QUALITY ASSURANCE PROGRAM

DOCUMENT CATEGORIES AND APPROVALS

DOCUMENT CATEGORY	SUBJECTS COVERED	PREPARED BY	REVIEWED BY	QUALITY ASSURANCE CONCURRENCE REQUIRED	APPROVED BY	ISSUED BY
Abnormal Occurrences	Technical Specification or Operating License Violations	Three Mile Island Plant Staff	FORC, GORE, others as appropriate	Not required	Manager-Generating Stations	Manager-Generating Stations
Approved Vendors List	Vendors Qualified to Supply Equipment and/or Services	Operational Quality Assurance	Operational Quality Assurance and Generation Engineering	Manager-Operational Quality Assurance	Manager-Operational Quality Assurance and Manager-Generation Engineering	Manager-Operational Quality Assurance
Audit, Inspection and Surveillance Reports	Audit, inspection and surveillance checklists, reports, followups, corrective action, etc., as appropriate.	Operational Quality Assurance	Operational Quality Assurance and others as affected	Manager-Operational Quality Assurance	Manager-Operational Quality Assurance	Manager-Operational Quality Assurance
Design, Manufacturing, Construction, Installation Maintenance and Repair Drawings	Drawings required for design, manufacturing, construction, installation, maintenance and repair.	Generation Engineering	Generation Engineering and others as appropriate	Manager-Operational Quality Assurance	Manager-Generation Engineering	Manager-Generation Engineering
Inservice Inspection Requirements	Documents covering the general schedule and types of inservice inspections to be performed, acceptance standards, qualification of inspection procedures, indoctrination, training and qualification of inspection personnel, evaluation of test results and handling anomalous and unacceptable results.	Generation Engineering	Generation Engineering	Manager-Operational Quality Assurance	Manager-Generation Engineering	Manager-Generation Engineering

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DOCUMENT CATEGORY	SUBJECTS COVERED	PREPARED BY	REVIEWED BY	QUALITY ASSURANCE CONCURRENCE REQUIRED	APPROVED BY	ISSUED BY
Maintenance or Repair Requirements Docu- ments	Maintenance and repair require- ments for either a specific situation or general mainte- nance and repairs.	A. Generation Engineering	Generation Engi- neering	Manager-Operational Quality Assurance	Manager-Genera- tion Engineering	Manager-Genera- tion Engineering
		B. Vendor	Three Mile Island Personnel and others as appropriate	Quality Control Sup- ervisor	Three Mile Island Supervisor of Maintenance, others as appro- priate	Three Mile Island Supervisor of Maintenance
Modification and Design Documents	Documents required for the accomplishment of a plant modification	Generation Engi- neering	Generation Engi- neering	Manager-Operational Quality Assurance	Manager-Generation Engineering	Manager-Genera- tion Engineering
Nonconformance and Corrective Action Documents	Nonconformances, corrective action documents, records, etc.	A. Nonconformance by person noting the nonconform- ance.	Responsible Manager or plant personnel	On materials, parts components or ser- vices not installed and operational in the plant or if the nonconformance was noted by Quality Assurance.	Corrective action approved by respon- sible Manager or Plant personnel.	As Required.
		B. Corrective Action by personnel responsible for corrective action.				
Operating License and Changes including Technical Specifica- tions	Operating License and all amend- ments.	Responsible staff	Appropriate Mana- gers, the Three Mile Island per- sonnel, FORC, and GORB.	As required under review requirements.	V.P.-Generation	V.P.-Generation
Procurement Documents	The documents required for pro- curement including specifications, drawings, purchase requisitions, etc.	Responsible Home Office Staff or Three Mile Island Plant	Generation-Engi- neering if not with- in the System Bound- ary Book or there is no approved specifi- cation.	Operational Quality Assurance	Responsible Mana- ger or Three Mile Island Superin- tendent	Responsible Man- ager or Three Mile Island Superintendent

DOCUMENT CATEGORY	SUBJECT COVERED	PREPARED BY	REVIEWED BY	QUALITY ASSURANCE CONCURRENCE REQUIRED	APPROVED BY	ISSUED BY
Quality Assurance Plan	Quality Assurance Program Require- ments	Operational Quality Assurance	The Managers, PORC, GORB, Three Mile Island Superinten- dent	Manager-Operational Quality Assurance	V.P.-Generation	V.P.-Generation
Quality Assurance Records	Quality Assurance Records, including material cert'd, radio- graphs, test reports, etc.	Responsible Per- sonnel	Operational Quality Assurance as re- quired	Operational Quality Assurance as re- quired	Originator	Originator
Specifications	Detailed requirements that must be satisfied to ensure that a part, material, component, ser- vice, etc., is adequate.	Generation Engi- neering	Generation Engi- neering	Manager-Operational Quality Assurance	Manager-Genera- tion Engineering	Manager-Genera- tion Engineering
System Boundary Book	The Boundaries established for different nuclear safety classi- fications.	Generation Engi- neering	Generation Engi- neering	Manager-Operational Quality Assurance	Manager-Genera- tion Engineering	Manager-Genera- tion Engineering