ATTACHMENT I

Quality Assurance Program
Revision 9

Consolidated Edison Company of New York, Inc.
Indian Point Unit No. 2
Docket No. 50-247
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This Quality Assurance Program description generally follows the format of ANSI N18.7, 1976 including the sequential identification of its sections, except that sections 1 "Scope" and 2 "Definition" are not included. Consequently, this description begins with section 3.0.

Revision 9, November 30, 1991

# QUALITY ASSURANCE PROGRAM

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# FORWARD

The following quality assurance program conforms to the requirements of 10CFR50, Appendix B. Additionally, Con Edison commits to having a Quality Assurance Program complying with the Regulatory Position in the following Regulatory Guides as modified by Tables A and Table B.

NRC Regulatory Guides

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|---|---|
| 1.8 | "Personnel Selection and Training, Revision 1, September, 1975 |
| 1.29 | "Seismic Design Classifications", Revision 3, September, 1978 |
| 1.30 | "Quality Assurance Requirements for the Installation, Inspection and Testing of Instrumentation and Electrical Equipment," August 11, 1972 |
| 1.33 | "Quality Assurance Program Requirements (Operation)," Revision 2, February, 1978 |
| 1.37 | "Quality Assurance Requirements for Cleaning Fluid Systems and Associated Components of Water-Cooled Nuclear Power Plants," March 16, 1973 |
| 1.38 | "Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage and Handling of Items for Water-Cooled Nuclear Power Plants," Revision 2, May, 1977 |
| 1.39 | "Housekeeping Requirements for Water-Cooled Nuclear Power Plants," Revision 2, September, 1977 |
| 1.54 | "Quality Assurance Requirements for Protective Coatings Applied to Water-Cooled Nuclear Power Plants," June, 1973 |
| 1.58 | "Qualification of Nuclear Power Plant Inspection, Examination, and Testing Personnel," Revision 1, September, 1980 |

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| 1.64 | "Quality Assurance Requirements for the Design of Nuclear Power Plants," Revision 2, June, 1976 |
| 1.74 | "Quality Assurance Terms and Definitions," February, 1974 |
| 1.88 | "Collection, Storage and Maintenance of Nuclear Power Plant Quality Assurance Records," Revision 2, October, 1976 |
| 1.94 | "Quality Assurance Requirements for Installation, Inspection, and Testing of Structural Concrete and Structural Steel during the Construction Phase of Nuclear Power Plants," Revision 1, April, 1976 |
| 1.116 | "Quality Assurance Requirements for Installation, Inspection, and Testing of Mechanical Equipment and Systems," Revision 0-R, June, 1976 |
| 1.123 | "Quality Assurance Requirements for Control of Procurement of Items and Services for Nuclear Power Plants," Revision 1, July, 1977 |
| 1.144 | "Auditing of Quality Assurance Programs for Nuclear Power Plants," January, 1979 |
| 1.146 | "Qualification of Quality Assurance Program Audit Personnel for Nuclear Power Plants," August, 1980 |

Many ANSI standards endorsed by these Regulatory Guides give quality assurance programmatic control for the design and/or construction phases of nuclear power plants. Accordingly, Con Edison has, where practicable, adapted these standards' requirements and guidelines to the operations phase of its nuclear power plants and has developed provisions for certain operations phase conditions not addressed in these standards.

Where any discrepancies exist between this program description and the requirements and guidelines of the above Regulatory Guides, the requirements and guidelines of the ANSI Standards and associated Regulatory Guides shall prevail as modified by Table A and Table B.

# QUALITY ASSURANCE PROGRAM

## 3.0 Owner Organization

### 3.1 General

Con Edison owns nuclear units Indian Point No. 1 and No. 2. Unit No. 2 is in operation. This program of administrative controls and quality assurance applies to the operation of Indian Point Unit No. 2, including those activities conducted on the Unit No. 1 site that are necessary to support Unit No. 2 operation. This program is in effect at all times to assure that operational phase activities are carried out without undue risk to the health and safety of the public.

This program is documented through corporate instructions and administrative procedures developed by participating organizations and provides control of activities affecting the quality of structures, systems, and components of the nuclear plants and their operation consistent with their importance to safety.

The determination of which systems, structures and components affect safety is in accordance with 10 CFR 50 Appendix B and includes those

- which comprise or are necessary to ensure the integrity of the reactor coolant pressure boundary
- which ensure the capability to shutdown the reactor and maintain it in a safe shutdown condition
- whose failure could result in conservatively calculated offsite doses that exceed 0.5 Rem to the whole body or its equivalent to any part of the body; and
- structures whose failure could reduce the functioning of plant features within the above categories to an unacceptable safety level.

Those structures, systems, and components are those that prevent or mitigate the consequences of postulated accidents that could cause undue risk to the health and safety of the public and are designated as Con Edison Class "A". Activities affecting quality are documented within a document control system which assures that instructions, procedures and drawings are reviewed and approved for release by authorized individuals.

Included in "Class A" is the environmentally qualified (EQ) equipment on the EQ Master List which identifies those particular items that are located in a harsh environment and are in compliance with 10 CFR 50.49, the DOR Guidelines and/or NUREG-0580.

This list is maintained as a controlled document by the Chief Plant Engineer and is distributed to Nuclear Power, Central Engineering, Nuclear Quality Assurance and other affected organizations as changes are made.

3.2 Assignment of Authority & Responsibility

The Chairman and Chief Executive Officer of Con Edison has directed that all personnel involved in activities associated with the safety of the nuclear power plants participate in the quality assurance program.

Lines of authority, responsibility, and communication among the organizations participating in this program are shown in Charts A and B. Chart A depicts the corporate organization and Chart B the on-site organization. These relationships, departmental responsibilities and key personnel job descriptions are documented and updated as appropriate.

The major organizations or groups participating in this program are Nuclear Power, Central Engineering, Construction, Power Generation Maintenance, Purchasing, Central Stores, Nuclear Fuel Supply, Nuclear Quality Assurance and the Nuclear Facilities Safety Committee. Changes to the quality assurance program, which are described in a corporate instruction, may be initiated by any of these organizations. Nuclear Quality Assurance coordinates overall development of this instruction and obtains concurrences of the organization(s) affected by the changes. The approval of the Executive Vice President, Central Operations is required for all changes to this corporate instruction.

Procedural controls provide for "waiving" of tests, inspections and operations previously specified by Central Engineering, Nuclear Quality Assurance or Nuclear Power. These procedural controls provide authority to personnel or organizations that originally specified the test, inspection or operation to reevaluate their necessity and, where appropriate, to authorize a waiver. (9-1)

In case of an emergency or a similar situation, procedural controls provide for possible waivers to inspections, tests or

operational requirements. These conditions and controls, discussed further in item 3 of Table A, require documented authorization by the Vice President, Nuclear Power or his designated alternate.

Provisions in the quality assurance program also provide for development of procedures for unique situations which differ from specified programmatic controls with the approval of the Executive Vice President, Central Operations.

Disputes involving quality arising from a difference of opinion between Nuclear Quality Assurance personnel and other departments' personnel are resolved by the direct management of the personnel involved or, where necessary, by a higher level of management. Nuclear Quality Assurance by virtue of its independence within the corporate structure, can assure that significant quality disputes receive appropriate resolution satisfactory to Nuclear Quality Assurance.

The duties and responsibilities of the participants are described in Position Guides, procedures or manuals. These duties and responsibilities are designed to assure that the attainment of program objectives is verified by qualified personnel who do not perform or directly supervise the work.

The Vice President, Nuclear Power and, reporting to him, the General Manager Nuclear Power Generation and the General Manager Technical Services are responsible for the day-to-day operation, safety, security and maintenance at the plant.(9-8)

The Director, Nuclear Quality Assurance oversees the quality assurance activities at Indian Point and Nuclear Quality Assurance procurement and audit activities. He has two site managers reporting to him, Manager, Quality Surveillances and Manager, Quality Control and two offsite managers, Manager QA Audits and Programs and Manager, Procurement QA. The Director, Nuclear Quality Assurance has direct communication access to the Vice President, Nuclear Power. The Director, Nuclear Quality Assurance is responsible for the indoctrination and training of personnel reporting to him.

The Nuclear Facilities Safety Committee (NFSC) is composed of Company employees the majority of which are independent of the Nuclear Power organization. The NFSC is responsible for advising the President of the Company regarding plant safety. The organization and duties of this Committee are described in a charter and in the Plant Technical Specifications and approved by the President of the Company.

The NFSC is kept fully informed by Nuclear Power management personnel of matters related to nuclear safety. This information is documented and reviewed by the NFSC. The NFSC meets at least quarterly to review items related to safety and semiannually to review and evaluate the results of periodic audits performed by Nuclear Quality Assurance to further assure safe operation and the adequacy of the audit program.

An on-site group known as the Station Nuclear Safety Committee (SNSC) functions within the on-site organization and advises the Vice President, Nuclear Power on all matters related to nuclear safety. The organization and duties of the SNSC are described in a charter forming part of plant Technical Specifications. This committee meets at least once per calendar month and is comprised of key station personnel.

Central Engineering is primarily responsible for the design activities included in system and component modification. To exercise this responsibility, Central Engineering prepares, issues, revises, and controls design documents including specifications, drawings, and modification procedures.

Field Engineering provides direct engineering support to the plant. This group is located at the plant site and reports to Central Engineering.

Plant Engineering provides day to day technical advice to the plant. This group is also located at the plant site but reports to Nuclear Power. Plant engineering also prepares and issues documents associated with minor modifications.

Construction is responsible for major plant modifications funded from the company's capital budget, utilizing either company forces or outside contractor labor, and may also be given responsibility for selected repairs. In these cases, work is accomplished under the direction of designated Project Managers in accordance with Construction administrative directives.

Purchasing is responsible for preparing, issuing and controlling purchase orders which are not initiated by the plant and for maintaining an approved vendors list.

Material Procurement is responsible for preparing issuing and controlling purchase orders which are initiated by the plant, for reviewing purchase orders issued by Construction, for receipt inspection of incoming Class "A" Items and for the inventory control of Class "A" stock items. Material Procurement reports to Nuclear Power.

Central Stores (Cortlandt Warehouse) provides storage facility for materials and supplies for Indian Point Station and fills orders for supplies from users and other storerooms.

Nuclear Fuel Supply is responsible for procurement and timely delivery of nuclear fuel to Indian Point 2 consistent with assuring reliable supply. Nuclear Fuel Supply responsibilities include planning and providing for all nuclear fuel requirements, determining the required quantities of uranium, UF6 conversion services, enrichment, fabrication, shipping, storage and other nuclear fuel services, preparation of uranium specifications, arranging and controlling all traffic of nuclear fuel and by-products prior to fabrication and in transfer to and from the nuclear plant.

Nuclear Quality Assurance is responsible for assuring that quality assurance programs are established consistent with this program and company policy and, assures that these programs are properly implemented. Nuclear Quality Assurance carries out these responsibilities primarily through program development, site surveillance and first-line inspection and by auditing those activities which affect plant safety. Nuclear Quality Assurance develops audit plans and schedules, and administers other activities associated with auditing. The Director, Nuclear Quality Assurance reports to the Assistant Vice President, Power Generation Services, who reports directly to the Executive Vice President, Central Operations. This provides Nuclear Quality Assurance with the authority and organizational freedom to identify quality problems; to initiate, recommend or provide solutions through designated channels; and to verify implementation of solutions. Nuclear Quality Assurance is responsible for indoctrination and training of Nuclear Quality Assurance personnel and for reviewing proposed changes to this program. Nuclear Quality Assurance reviews documents which implement this program to assure that each includes adequate quality assurance principles.

Each organization participating in this program is responsible for providing indoctrination and training of its personnel performing activities affecting quality and safety to ensure that suitable proficiency is achieved and maintained. Nuclear Quality Assurance or Nuclear Power, as applicable, certifies Con Edison non-destructive examination personnel. Nuclear Quality Assurance personnel are trained to have and maintain proficiency in skills related to their specific assignments and in their knowledge of this program. Nuclear Quality Assurance personnel are provided indoctrination and training in the areas of quality assurance management and quality assurance practices, procedures, and requirements, including applicable regulatory and code requirements. Nuclear Quality

Assurance provides indoctrination and training concerning the requirements of this quality assurance program to Nuclear Quality Assurance personnel, and appropriate personnel in other organizations.

3.3 Indoctrination and Training

Indoctrination and training in the administrative controls and quality assurance program is conducted for Central Engineering, Purchasing, Construction, Operations, Maintenance and Nuclear Quality Assurance personnel who perform activities which affect quality. This training includes:

(1) company policies, procedures and instructions which establish the program,

(2) procedures or instructions which implement the program.

Personnel participating in the quality assurance Program are conversant with the requirements of Appendix B to 10 CFR 50 and the Regulatory Guides, as appropriate, listed in the Foreword. To further their understanding of this document, such personnel participate in industry-technical society discussion groups and maintain contact with latest industry literature.

Training of Nuclear Quality Assurance personnel is based on the individual needs to improve or develop new skills in performing their jobs. Accordingly, selected courses are attended by Nuclear Quality Assurance Engineers, Nuclear Quality Assurance Examiners and Consultants. These courses are in the areas of quality assurance management, quality assurance requirements for the nuclear industry, engineering auditing, reliability, non-destructive examination techniques, and welding technology. When required by Code, detailed and specific training is given to examiners in non-destructive examination in accordance with SNT specifications.

A record of training sessions, including a list of those attending and a description of the material discussed, is maintained.

For station staff retraining and replacement training, a program is maintained under the direction of the Nuclear Training Manager.

3.4 On-site Operating Organization

The on-site operating organization includes one or more individuals knowledgeable in the following fields: nuclear power plant operation, nuclear power plant mechanical,

electrical and electronic systems; nuclear engineering; chemistry and radiochemistry and radiation protection. Members of the facility staff have appropriate experience, training and retraining to assure that necessary competence is maintained in accordance with the provisions of the plant Technical Specifications. The training and retraining programs are documented and approved by the Nuclear Training Manager, Nuclear Power.

Qualification and training in welding is in accordance with the requirements of ASME Section IX or other applicable codes.

Positions requiring personnel to have a current NRC reactor operator license are delineated in the Plant Technical Specifications.

The bases for the qualification of personnel who perform quality assurance inspections, examinations and tests are the following:

a) Education: minimum required - high school graduate or, alternatively, suitable job experience in the particular area.

b) Training: minimum required - evidence of specialized training sufficient to perform a particular job, e.g., welding inspection or, alternatively, demonstrated capability via job experience.

c) Evaluation: personnel are evaluated annually to determine their capability to perform their job function. Each evaluation is documented and included in the individual's personnel folder.

d) Specific Capabilities:

   1. Physical: minimum required - physically capable of performing the job function including adequate vision and other physical characteristics, if necessary for the job.

   2. Technical: minimum required - familiarity with tools and equipment to be used on the job and proficiency in their use including, as necessary, measuring and test equipment calibration and control methods.

The above qualification bases apply to Nuclear Quality Assurance inspection personnel who perform site inspections of maintenance and modification activities and Material Procurement inspection personnel who perform receiving inspections.

For particular projects Nuclear Quality Assurance personnel may be supplemented by other Company organizations or by outside forces. In these situations, Nuclear Quality Assurance retains the responsibility for using appropriately qualified personnel.

If the performance of an individual has not met the requirements specified for the particular job, supervision has recourse to provide additional training, additional supervision or to remove the individual from the job assignment. Position Guides, procedures and manuals identify major responsibilities of particular positions. On-the-job supervision and formal yearly reviews assure the necessary continued proficiency of any particular individual. Prior to the assignment of personnel to a job function, the qualifications of the personnel are evaluated by supervision. This evaluation considers previous education, training, results of past supervisory reviews and on-the-job experience and performance to assure the initial proficiency of the individual. On-the-job performance after assignment to particular job functions is monitored by supervising personnel. The qualifications of Nuclear Quality Assurance and Material Procurement inspection personnel, including their education, experience and training, are documented. Personnel involved in particular NDE activities, including the performance evaluation and supervision in nondestructive examinations are appropriately qualified in accordance with the requirements specified in SNT-TC-1A. Personnel on-the-job performance is reviewed annually, and the results are documented and retained in personnel folders.

The facility management and technical support organizations are defined in the plant Technical Specifications. At least one licensed Operator is in the control room when fuel is in the reactor. At least two licensed Operators are present in the control room during reactor start-up, scheduled reactor shutdown and during recovery from reactor trips. An individual qualified in radiation protection procedures is on site when fuel is in the reactor. Core alterations after initial fuel loading are directly supervised by a licensed Senior Reactor Operator.

The General Manager, Nuclear Power Generation has overall responsibility for facility operation.

The Director, Nuclear Quality Assurance is responsible for site Nuclear Quality Assurance activities. Nuclear Quality Assurance reviews and audits the quality assurance program. Additionally, audit activities are periodically reviewed by the Nuclear Facilities Safety Committee.

## 4.0 Reviews and Audits

Programs for reviews and for audits of activities affecting plant safety during the operational phase have been established. These programs assure that these activities are carried out in accordance with regulatory requirements, approved procedures and instructions, and license provisions. They provide for the following:

- review of all proposed changes or modifications to plant systems or equipment that affect nuclear safety
- review of tests, procedures and experiments that affect nuclear safety
- review of proposed changes to the plant Technical Specifications
- investigation of all violations of the plant Technical Specifications
- review of facility operations to detect potential nuclear safety hazards
- review of the Plant Security Plan and implementing procedures
- review of the Emergency Plan and implementing procedures
- verification that reportable events which require reporting to the NRC within twenty-four hours, are promptly investigated and corrected
- review of changes to the Process Control Program and the offsite Dose Calculation Manual

These programs are carried out by the Station Nuclear Safety Committee (SNSC) and Nuclear Quality Assurance. The independent review program, administered by the Nuclear Facilities Safety Committee (NFSC), identifies those personnel performing reviews; standing committees functioning as independent review bodies; and the composition, meeting frequency, quorum definition of such committees; the kinds of records maintained by such committees and the documentation of reviews as provided for in the plant Technical Specifications. These programs are, themselves, reviewed for effectiveness by management.

The NFSC charter identifies the areas to be audited by Nuclear Quality Assurance; the responsibilities and authorities of involved personnel; provisions for the use of special-

ists (consultants) or sub-groups; authorization to perform audits; distribution of reports; lines of reporting and authority; timeliness of information dissemination; requirements for follow-up and re-audit and other provisions required for effectiveness reviews and audits.

4.1 Audit Program

The audit program conducted by Nuclear Quality Assurance provides for a comprehensive system of planned and periodic audits to verify that operating nuclear facilities are operated, administered, and managed in accordance with applicable requirements and to assess quality program effectiveness.

Nuclear Quality Assurance documents audit plans and establishes a schedule of periodic audits. These audits are designed to verify compliance with all aspects of the quality assurance program and are conducted at least once every two years or more frequently commensurate with their safety significance. These audits include the following:

- The conformance of facility operation to all provisions contained within the plant Technical Specifications and applicable license conditions at least once per 12 months.

- The conformance of all provisions contained within the Environmental Technical Specifications (Appendix B) pertaining to radiological matters and applicable license conditions at least once per 12 months.

- The performance, training and qualifications of the entire station staff at least once per 12 months.

- The results of all actions taken to correct deficiencies occurring in facility equipment, structures, systems or method of operation that affect nuclear safety at least once per 6 months.

- The Facility Fire Protection Program and its implementing procedures at least once per 24 months.

- The Facility Emergency Plan and implementing procedures at least once per 12 months.

- The Facility Security Plan and its implementing procedures at least once per 12 months.

- A fire protection and loss prevention inspection and audit performed utilizing either qualified offsite licensee personnel or an outside fire protection firm at least once per 12 months.

- The radiological environmental monitoring program and the results thereof at least once per 12 months.

- The Offsite Dose Calculations Manual and implementing procedures at least once per 24 months.

- The Process Control Program and implementing procedures for processing and packaging of radioactive wastes at least once per 24 months.

- The performance of activities required by the quality assurance program to meet the provisions of Regulatory Guide 1.21, Revision 1, June 1974 and Regulatory Guide 4.1, Revision 1, April 1975 at least once per 12 months.

- The Fitness for Duty Program nominally every 12 months. (9-3)

- Any other area of facility operation considered appropriate by the NFSC, or the President of the Company.

The only exception to the two year (or more often) frequency is an inspection and audit of the fire protection and loss prevention program performed by an outside Qualified fire consultant which is conducted at least once per 36 months.

The audits are conducted by Nuclear Quality Assurance who may utilize other Consolidated Edison employees (except those having direct responsibility in the area being audited) and/or consultants or specialists from outside the Company. The results of each audit are reviewed by the auditors with the management of the activity audited at the conclusion of the audit. A written report containing the audit findings and recommendations is issued by Nuclear Quality Assurance within thirty days of the completion of the audit process. The audit report is issued to the management of the audited group(s) for reply to the audit results. It is distributed to the Secretary, Nuclear Facilities Safety Committee; the Executive Vice President, Central Operations; the Vice President, Nuclear Power; the Assistant Vice President, Power Generation Services; the General Auditor; the Senior Officers of the activities audited; the Manager, Regulatory Affairs, the appropriate General Manager; the Director, Nuclear Quality Assurance and, when it involves ASME, Section III Code Requirements, to the Authorized Inspector. It is the responsibility of the activity audited to review the report and reply, in writing, within thirty days to Nuclear Quality Assurance concerning the actions to be taken to resolve each finding. Nuclear Quality Assurance is responsible for verifying the effectiveness of these actions, including reaudit when necessary. The Nuclear Facilities Safety Committee reviews the adequacy of the audit program at least semiannually.

## 5.0 Program, Policies and Procedures

### 5.1 Program Description

Administrative controls and quality assurance requirements are described in documents such as corporate instructions, station administrative orders and station procedures. A summary document which identifies these administrative and quality assurance procedures has been compiled and is maintained current. This document is suitably indexed to identify relationships of the contents to the pertinent criteria of 10 CFR 50, Appendix B and applicable Regulatory Guides.

Nuclear power plant structures, systems, components and consumables covered by this program are identified as "Class A" Items" and are those that prevent or mitigate the consequences of postulated accidents that could cause undue risk to the health and safety of the public. A list of "Class A" structures, systems, components and consumables appears in Appendix A. Identification of Class A components within systems are made and documented on a case-by-case basis, as required, via established procedures. This may include declassification. In addition, Vice President, Nuclear Power has an option to utilize the above program for specific non-safety related modifications. The major organizations and their responsibilities are identified and delineated in para. 3.2 of this document.

This program provides control of activities affecting the quality of Class A items to an extent consistent with their importance to safety. In the case of consumables, adequate quality is assured by activities such as testing on arrival, review of manufacturer's certification, or vendor evaluation. Additional controls such as vendor surveillance, and receipt inspection are not necessarily performed. These controls are described in the various documents identified in the summary document.

This program takes into account the need for special controls, processes, tests, equipment, tools and skills to attain the required quality and the need for verification of quality by inspection, evaluation or test. These needs are accommodated through the issuance of and compliance with procedures, such as:

a. Non-Destructive Examination Procedures
b. Welding Procedures
c. Operating Procedures
d. Start-up Testing Procedures
e. Calibration of Measuring and Test Equipment
f. Receiving Inspection Procedures
g. Vendor Evaluation Procedures
h. Maintenance and Modification Procedures

## 5.2 Rules of Practice

Rules and instructions pertaining to personnel conduct and control are contained in various procedures and operating orders issued by the on-site organization. These include special instructions and authority for normal procedural actions, emergency actions, responsibilities of key personnel, watch schedules, availability and duties of key personnel at all times, preparation of procedures and documenting and retention requirements.

### 5.2.1 Responsibilities and Authorities of Operating Personnel

Responsibilities and authorities of the plant operating personnel are delineated in operating and administrative procedures prepared and approved by appropriate on-site management as required by the sections of the plant Technical Specifications entitled "Administrative Controls". These include:

a. The reactor operator's authority and responsibility for reactor shutdown under various conditions.

b. The responsibility to determine safe operating procedures for reactor return to power after a trip or an unscheduled or unexplained power reduction.

c. The responsibility for a Senior Reactor Operator to be present at the plant and the authority to provide direction for returning the reactor to power following a trip or unexplained power reduction.

d. The responsibility to believe and respond conservatively to instrument indications unless they are proved to be incorrect.

e. The responsibility to adhere to the plant Technical Specifications.

f. The responsibility to review routine operating data to assure safe operation.

### 5.2.2 Procedure Adherence

The requirement that procedures be adhered to is both a plant administrative requirement and a plant Technical Specification requirement. Safety-related procedures and procedure changes are reviewed by the Station Nuclear Safety Committee. In the event of an emergency not covered by an approved procedure, operations personnel take appropriate action to protect the health and safety of the public and to minimize personnel injury and damage to the facility. Written directives identify the manner in which procedures are to be implemented.

Procedural actions which must be committed to memory are those defined as "Immediate Operator Actions" in the Emergency Operating Procedures.

Documentation of procedure use is required when specifically called for by the procedure in question. For example, a startup "Procedure Check-Off" is completed during plant warm-ups and power ascensions from shutdown conditions; a shutdown "Procedure Check-Off" is completed during planned plant shutdowns and cooldowns.

Following a unit trip or shutdown, a precriticality "Procedure Check-Off" is completed prior to initiating control rod withdrawal for the purpose of achieving criticality if more than 24 hours have elapsed since completing the last precritical check-off procedure.

After completion, all check-off procedures are signed by the Operations Watch Supervisor. Copies of all procedures are available to appropriate members of the plant staff.

5.2.3 Operating Orders

Dissemination to the plant staff of instructions of general and continuing applicability to the conduct of business is provided through the issuance of appropriate administrative directives and operating procedures to the affected personnel. Station administrative orders identify responsibilities and are binding upon all members of the Nuclear Power and Power Generation Maintenance Departments as appropriate to the subject matter contained therein. Procedures for activities at the nuclear facility by groups other than Nuclear Power and Power Generation Maintenance are to be consistent with the requirements of Station Administrative Orders. Additional guidance, if necessary, is issued within individual subsections or staff groups to provide for delineation of detail not covered in Station Administrative Orders. Such additional guidance is in the form of administrative directives and/or procedures and may deal with shift changes, control room restrictions, operator duties and requirements, maintenance instructions, document control and other such matters applicable to the needs for operating a safe nuclear plant.

Provisions are made for periodic review and updating of the above instructions. Station Administrative Orders are reviewed biennially. The General Managers in Nuclear Power and Director, Nuclear Quality Assurance ensure that these reviews are accomplished and report the results to their respective management. In addition, the General Managers biennially review the administrative directives of their respective sections and report upon their

adequacy and consistency to the Vice President, Nuclear Power.

5.2.4 Special Orders

A mechanism exists for the issuance of management instructions which have short-term applicability and which require dissemination. The plant Technical Specifications direct that these orders, among others, be established, reviewed, implemented and maintained. These instructions are written to provide direction for non-recurring events, special situations or other categories of a similar nature.

These are prepared at the appropriate management level and distributed to the affected organizations and personnel. Because of the unique nature of the contents of these instructions, they are automatically canceled, once implemented.

5.2.5 Temporary Procedures

Temporary Operating Instructions are issued, when required, as temporary procedures and are related to the performance of special tests or operations that are applicable for a short period of time. Procedures are issued for guidance during off-normal conditions and during special circumstances, as required.

The review and approval mechanisms for these temporary procedures or changes thereto are the same as those for normal operating procedures as described in paragraphs 5.2.2 and 5.2.15 which include the assignment of approval authority to management.

5.2.6 Equipment Control

Prior approval by Operations personnel is required for the release of equipment or systems for maintenance or repair. Normally, for interfacing station activities, Maintenance Supervisors, Instrument and Control Supervision, and Operations Watch Supervisors meet beforehand to plan the work. They verify that equipment or systems can be released and determine the time required to do the job, and safety considerations to personnel and the public. Essential elements of these details are documented in work permits.

When permission is granted to remove equipment from service, the equipment is rendered inoperative and protected for work. Operations Watch Supervisors verify that the work is completed prior to readying the equipment or system for return to service.

Shutdown and subsequent start-up procedures guide the preparation of equipment or systems for maintenance. They include cognizance of such parameters as monitoring and control of reactivity, load reduction and cooldown rates, sequencing in activating or deactivating, provisions for decay heat removal and emergency operating situations.

Specific check-lists provide the assurance that pertinent factors are considered. Entries into closed systems or vessels are controlled. This extends to accountability for items taken in and out by maintenance personnel.

Temporary alterations which include such items as bypass devices, lifted electrical contacts, varying of setpoint limits, jumping, and opening of trip links require prior approval from, and are controlled by, Operations Watch Supervisors acting in accordance with approved directions. Entries are documented in log books.

Status of inspections in association with work on equipment or systems is controlled through utilization of procedures, travelers, work step lists, check lists, tags and labeling. Nonconformances associated with maintenance are documented on inspection reports. Acceptance of a disposition of nonconformances by Nuclear Quality Assurance is required prior to release of an item for service. Usually, tests are conducted upon completion of work as a preoperational activity. Test requirements are determined by Test and Performance. Completion of tests are certified by Operations Watch Supervisors.

Upon completion of servicing work, operations personnel are responsible for verifying that the work is complete and that operating items are restored to prerequisite positions in accordance with applicable procedures.(9-1)

5.2.7 Maintenance and Modification

Maintenance/modification of safety-related structures, systems, and components including the installation, inspection and testing of instrumentation, electrical equipment and structural concrete, structural steel, mechanical equipment and piping and the application of protective coatings, are controlled by station procedures and are performed in a manner that assures a level of quality consistent with precedents set by the Architect Engineer and NSSS Supplier or appropriately reviewed alternates to those precedents.

Pre-operational performance testing provides an added measure of confidence that systems and components will continue to perform their intended functions after maintenance or modification.

These activities are performed in accordance with applicable procedures, manuals, instructions, drawings, specifications and other documents that take into account, as appropriate, planning requirements, codes and standards, the levels of skills required to do the work, and the assurance that properly identified acceptable material is used. Preparation involves consideration of such factors as assigning responsibilities, identification of written instructions and scheduling and interfacing with other applicable operations activities. Included in the instructions are precautions to be observed, installation instructions, identification of equipment, procedures, travelers, step lists, check lists, inspection points, and cleaning, handling and housekeeping requirements, as applicable. Particular attention is paid to prerequisites such as assignment of personnel, assurance that proper documentation and materials are available, need for manufacturer's manuals and preparation for documenting results. Pre-installation activities extend to assuring that only properly accepted material is used, written instructions are available and work permissions have been granted.

5.2.7.1 Maintenance

A maintenance program to maintain structures, systems, and components at a quality level necessary for them to perform their intended function, is in effect. Maintenance activities are planned, scheduled and accomplished in a manner consistent with safety considerations and plant Technical Specification requirements. In preparation for maintenance activities, such details as the use of approved material, need for special tools or equipment, safety precautions and detailed work instructions are considered.

Procedures involving maintenance of a recurring nature are contained in a maintenance procedure manual. These procedures may be revised as experience is gained.

Preventive maintenance procedures contain maintenance frequency requirements for safety-related systems components.

Inspections and surveillances during maintenance, and repair work verify continued functional capability of equipment on the EQ Master List. When these inspections and surveillances show that the equipment does not meet established acceptance criteria the inspection results are reviewed by Central Engineering and quantitatively evaluated to determine that age-related degradation has not compromised the ability of the equipment or system to perform its specified functions. Results of inspections and surveillances are also factored into future inspection intervals in order to change the frequency at which these inspections are conducted, thereby aiding in determining the qualified life of the equipment and its maintenance interval.

Plant maintenance activities are carried out in the following manner:

The work order is the mechanism by which station personnel can identify and document conditions in the field which require corrective work. The initiator of the work order is responsible for the correctness of the information which he identifies, e.g., the nature of the condition which requires corrective work. Operations reviews all work orders to determine their validity and to approve their implementation.

Any employee of Con Edison discovering a deficiency on plant components initiates a work order to correct the deficiency or reports it to his supervisor. When an employee reports a deficiency to his supervisor, the responsibilities of the supervisor include facilitating processing of the deficiency via the plant computerized work order management system.

The following may authorize work orders:

- Vice President, Nuclear Power
- General Manager, Nuclear Power Generation
- Operation Manager
- Maintenance Manager
- Instrument and Control Engineer
- Projects and Planning Manager
- Senior Watch Supervisor (in an emergency may authorize for Operations manager).

Test & Performance reviews all work orders to determine testing requirements, including acceptance criteria, ensures that the test criteria address the actual work that was accomplished and assures that the component will be tested under conditions that simulate or actually meet normal operating conditions for that component.

Test and Performance is a group consisting of a manager, test engineers and a test supervisor(s) who define post-maintenance test requirements and supervise equipment testing. The review of work orders by Test and Performance constitutes an independent review in that Test and Performance reports to the Chief Plant Engineer. The Chief Plant Engineer reports to the General Manager Technical Services who is independent of the General Manager Nuclear Power Generation who is responsible for plant operation.

The review of work orders by Test and Performance normally occurs prior to the start of work, however, if after the start of work, the work scope changes (e.g., to suit field conditions), Test and Performance reviews the revised scope to determine any revised testing requirements.

Test and Performance identifies Post-Maintenance Testing (PMT) requirements on the work order. This is accomplished by entering them in the computerized work order management system. The manager of Test and Performance is responsible for supervising Test and Performance personnel to assure that the PMT requirements are accurately and completely entered in the system. Test and Performance also prepares and issues PMT procedures. Additionally, PMTs are reviewed by Operations Watch Engineers to assure that they are appropriate.

The Operations Manager, or his designee, specifies on each work order whether Projects and Planning or Instrumentation and Control, is responsible for the work. Questions involving the assignment of these responsibilities are resolved by managers of the respective groups, or their designees.

For work managed by Nuclear Power, Projects and Planning or Instrumentation and Control, as applicable, is responsible for the correctness of the work order and implementing documents and

- designates the work group,
- updates work orders with any changes or additional information as required,
- prepares schedules in conjunction with operations and applicable work groups,
- prepares implementing documents for the work order as required, and enters this information on the work order. The work implementing documents consist of the work order and one or more of the following depending on job complexity: check lists, step lists, procedures, sketches, drawings, etc.

The work implementing documents, developed by Projects and Planning or Instrumentation and Control are reviewed for adequacy and correctness by a qualified person other than the preparer. This latter review constitutes an independent review.

In the case of other projects (ex. major capital projects) managed by the Construction Department, work implementing documents are normally developed by contractors under the controls of their QA program.

Test & Performance reviews the results of Post Maintenance Testing to verify that acceptance criteria has been satisfied and indicates this on the work order.

5.2.7.2 Modifications

When the work constitutes a modification to the plant, modification documentation is prepared by either Central Engineering or Plant Engineering as determined by the Chief Plant Engineer in consultation with Central Engineering, as necessary. This determination is based primarily on job complexity (e.g., scope and design impact) with the more complex jobs generally assigned to Central Engineering.

Procedures are in effect for the control and implementation of these design activities. Examples of the subjects covered in the procedures are:

1. Responsibilities within the engineering organizational unit and its various disciplines,

2. Managing the flow of technical information among internal supporting disciplines such as Civil, Electrical and Mechanical Engineering and Design Engineering (externally supported design activities are controlled through procurement of subcontracted services as the need arises),

3. Rules for developing and reviewing concept and scope documents and preliminary design documents with appropriate Station and installer organizations,

4. Control of the preparation, review, approval, release, and distribution of documents and their changes,

5. Rules concerning retention of design documents,

6. Design verification,

7. Rules for development of design criteria, design concepts, detailed designs, integration of Field Engineering forces, and review by affected Central Engineering disciplines as applicable to the scope of the particular modification.

A Discipline Engineer within the designated organization is assigned responsibility to prepare the modification documentation. The Discipline Engineer determines how the modification documentation should be developed and processed as one of the following:

- Modification (major) - a plant change that modifies plant design.

- Minor modification - a plant change where the replacement component, results in limited installation impact (e.g., no adverse seismic affect) and does not alter the system process or function.

- Determination of Equivalency (DOE) - an evaluation which determines that a replacement component is an equivalent replacement and is suitable for installation. (9-2)

Documentation developed for major modification includes, as applicable, the following:

- Design criteria.

- Concept and scope.

- Supporting calculations.

- Specifications, drawings.

- Prerequisites and corequisites.

- Special test requirements, acceptance criteria.

- Flushing/cleaning requirements.

- Welding requirements.

- Special precautions.

Minor modification documentation includes the above, as applicable, except that new design criteria are not established.

DOE documentation provides justification for a determination of equivalency.

Elements of the design process including design verification are identified in procedures. Some of the matters considered are:

1. Suitability of parts, equipment or processes for the application.

2. Compatibility of materials with each other and with the design environment.

3. Radiological controls.

4. Provisions for handling, storage, cleaning and shipping, as applicable.

5. Computations and calculations:

   a) Numerical accuracy,

   b) Consistency of results between alternate and original methods,

   c) Identification of design assumptions.

6. Analytic methods.

7. Fire protection.

8. Determining the reasonableness of results in comparison to design bases.

9. Permissibility of qualification testing alternatives as a verification technique.

10. Reasonableness of outputs when compared to inputs.

11. Approval of vendor submittals.

12. Prerequisites.

13. Requirements for welding.

14. Evaluating safety significance to assure compliance with regulatory requirements.

15. Verification that pertinent quality provisions have been incorporated.

16. Rules for utilizing original Architect-Engineer and NSSS design details in plant replacement items, additions or modifications.

17. Rules for distribution of design details to other affected interfacing organizational units, which include Nuclear Power for comment or information.

18. Inservice Inspection and Testing requirements.

19. Environmental Qualification of electrical equipment important to safety in accordance with the requirements of 10 CFR 50.49.

Inherent in these procedures are provisions for the control of documents and their changes. The modification documents carry revision level designations to assure that correct revision levels will be used in the work. For addition of new, complex systems, specification and drawing lists are prepared, issued and used. Procedures provide details for the maintenance, retention and storage of these design documents.

Some representative considerations accounted for in the formulation of modification procedures are:

1. Requirements of codes, standards, and regulatory documents.

2. Conditions affecting design such as pressure temperature, voltage, stress and seismic loads.

3. Functional and physical interfaces between systems.

4. Operating, maintenance, testing and inspection requirements, as applicable.

5. Process flow, equipment descriptions, material requirements and their compatibility.

6. Safety requirements.

7. Environmental, cleanliness and quality assurance requirements.

8. Performance characteristics.

9. Electrical layouts, cable and conduit schedules.

10. Special installation requirements for environmentally qualified equipment. These may be contained on the Design Modification Drawings, Vendors' drawings, or in special instructions.

The modification documentation is prepared and signed by the Discipline Engineer. Additionally, the modification documentation is reviewed and approved by a qualified Engineer other than the preparer. This additional review is to assure that the modification documentation is technically correct and that appropriate quality provisions (e.g., non-destructive examinations) are specified.

Affected plant functions perform critical reviews of the modification documentation. These include Plant Engineering, Operations, Training, Test and Performance, Computer Applications, and Environmental Qualification. Generally, these reviews verify that modification documentation includes adequate technical guidance and criteria, evaluate the impact of the modification in their respective areas of responsibility, support determination of post-modification testing requirements, assure consistency with the Plant Technical Specifications, assure that applicable safety evaluation requirements have been satisfied and provide for radiological control requirements.

After the modification documentation is issued for implementation the necessary installation work procedures are prepared. Projects and Planning prepares work procedures associated with most plant modifications. I&C prepares work procedures, as necessary, to implement modifications to installed instrumentation. Work may also be assigned by Projects and Planning to the Construction Department which normally engages contractors to prepare work procedures.

The work documentation is reviewed by personnel other than the documentation preparer to assure that it is complete and correct.

Verification of work during and after installation includes performance of inspections, tests, when applicable, nondestructive examination, recording as-constructed information, status indication, pressure testing, when applicable, and by other appropriate means.

Test and Performance is responsible for preparing post-modification test procedures, evaluating test results, and informing Operations personnel of acceptability of the test results.

Records of the completed work package are filed. Examples of the types of records are the job folder, results of inspections or tests, modification documents, maintenance work order, reference to other documents and close-out documentation. Similar controls apply to preventive, routine and corrective maintenance, as appropriate.

5.2.8 Surveillance Testing and Inspection Schedules

Surveillance testing and inspections, including in-service testing of pumps and valves, are the responsibility of Nuclear Power and are accomplished in accordance with the surveillance requirements in the plant Technical Specifications and Inservice Inspection and Testing Program. Included in these activities are: reactor coolant system surveillance, reactor coolant system integrity testing, containment tests, engineered safety features, emergency power system periodic tests, main steam stop valves, auxiliary feedwater system, reactivity anomalies, environmental monitoring surveys, and radioactive materials. Upon completion of testing, surveillance test results and inservice test results are reviewed by Test and Performance. This review consists of:

1. Verifying that the operability and overall acceptance criteria were satisfied.

2. Ascertaining that data were entered as required.

3. Verifying the test was done on schedule.

4. Trend analysis, as appropriate.

5. Evaluating condition(s) adverse to quality.

6. Evaluating data for compliance with Plant Technical Specification requirements.

The NDE portion of the Inservice Inspection program is also the responsibility of Test and Performance and is based on ASME Code Section XI. NDE personnel will be qualified to SNT-TC-1A 1975 as per our commitment to RG 1.58, Rev. 1, September 1980, however, NDE personnel who specifically perform ASME XI inservice examinations shall be qualified in accordance with the applicable edition of ASME XI as determined by Code of Federal Regulations 10CFR50.55a(g). As required, baseline data are gathered to permit a comparison of any changes occurring as a result of plant operations. The areas requiring inspections and the overall schedule are consistent with the requirements of the plant Technical Specifications. Test and Performance maintains inservice testing records and NDE Inservice inspection records. (9-4)

5.2.9 Plant Security and Visitor Control

A comprehensive security and visitor control program has been established, including measures to thwart attempted sabotage. Procedures have been developed by Nuclear Power which supplement features and physical barriers designed to control access to the plant and, as appropriate, to vital areas within the plant.

Measures have been established by the Site Protection, Manager to deter or discourage penetration by unauthorized persons, to detect such penetrations should they occur, to apprehend in a timely manner either unauthorized persons or authorized persons acting in a manner constituting a threat of sabotage, and to provide for appropriate authorities to take custody of violators. The means by which plant security and visitor control are enforced by both security and operating personnel include measures for physical and administrative control of access to the plant site or portions thereof, selecting and retaining reliable personnel and detecting aberrant behavior, monitoring the status of vital equipment and facilities, augmenting security in the event of actual or potential threats to plant security and designing features of the plant specifically for security purposes or features which, by their nature, reduce the vulnerability of the plant to sabotage attacks.

The security program provides for the identification of the following three security areas:

1. Con Edison-owned property under the administrative and procedural control of the Site Protection Manager and suitably marked by signs and other means which provide reasonable assurance that persons entering the area are aware they are on Con Edison property;

2. A protected area administratively and procedurally under the control of the Site Protection Manager affording clear fields of view on its perimeter and;

3. Vital areas isolated from non-vital equipment and facilities to the maximum extent practicable to limit access to a minimum number of authorized persons. As part of the security program, a list of these vital areas is maintained. Vital areas are protected against intrusion by unauthorized personnel. These areas are administratively and procedurally under control of the Site Protection Manager, in conjunction with General Manager, Nuclear Power Generation and the Operations Manager.

The Site Protection Manager has developed a Security Force Manual, approved by the Station Nuclear Safety Committee and is responsible for its maintenance, up dating, and distribution to authorized individuals and organizations.

Operations personnel form a part of the security force. Accordingly, the Operations Watch Supervisor, the Support Facilities Supervisor, Reactor Operators, Nuclear Plant Operators and other operating personnel are assigned various authorities and responsibilities forming a part of the security program.

The Site Protection Manager is responsible for developing and properly locating signs and notices relating to security, for training and drills and for submitting reports relating to security to the General Manager, Technical Services.

The Vice President, Nuclear Power has overall responsibility for the security program and its state of readiness.

5.2.10 Housekeeping and Cleanliness Control

Control procedures for housekeeping are prepared by Nuclear Power. These procedures encompass activities related to the control of cleanliness of facilities, materials and equipment; fire prevention and protection, including disposal of combustible material, radioactive contamination control; storage of solid radioactive waste, etc.

Procedures are prepared for and particular attention is given to work and storage areas where important items are handled and stored to preclude damage or contamination. The General Manager, Nuclear Power Generation provides for separate controlled storage areas, and issue, use and return of excess Class A materials. Procedures prepared by Nuclear Quality Assurance are used to verify control of the cleanliness of open primary systems. The Vice President, Nuclear Power establishes policy regarding work permits and provisions for the radiological as well as conventional health and safety of all employees. The General Manager, Nuclear Power Generation establishes policy for removal of equipment and material from the controlled area and its shipment, and the method of handling solid radioactive waste material for its removal from the controlled area at Indian Point Station.

Fire protection and prevention procedures are prepared and implemented by responsible Nuclear Power Personnel. These procedures include provisions for fire fighting and fire watches during and immediately following welding, enforcement of good housekeeping practices, building and maintenance care and outdoor housekeeping. Periodic inspections and surveillances are performed by Nuclear Quality Assurance personnel. Reports of results are issued to higher management.

5.2.11 Corrective Actions

Measures have been established which ensure that conditions adverse to quality which may occur during work, e.g., maintenance, are promptly identified in nonconformance reports or significant nonconformance reports and corrected. In the case of significant conditions adverse to quality, the cause of the condition is determined and corrective action taken and appropriately documented and reported.

The action addressee on nonconformance reports is responsible for either correcting the nonconformance or designating the organization responsible for completing the necessary corrective actions. The managements of these designated organizations are responsible for taking the necessary corrective actions.

Nuclear Quality Assurance, is responsible, via audits, for verifying that corrective actions resulting from nonconformance reports are implemented at the site.

When significant nonconformance reports are issued, Nuclear Quality Assurance prepares and distributes a quarterly report indicating the status of all unresolved significant nonconformance reports. This report is routed to appropriate management concerned with correcting the deficiency. The distribution of the quarterly status report of unresolved non conformance reports assures that the identification of significant conditions adverse to quality and corrective actions initiated are documented and reported to appropriate levels of management.

The action addressee on significant nonconformance reports is responsible for either correcting the deficiencies or designating the organization responsible for completing the necessary corrective actions. The managements of these designated organizations are responsible for taking the appropriate corrective actions. When corrective action has been completed, this will be identified on the report and forwarded to Nuclear Quality Assurance, by the action addressee. Corrective action shall include determination of the cause of the

nonconformance and the measures necessary to preclude repetition.

Nuclear Quality Assurance reviews the action taken and takes the initiative to resolve disputes and disagreements, if any. After agreement has been achieved, Nuclear Quality Assurance completes the report by noting concurrence. Copies of completed reports are then routed to the action addressee and other appropriate Con Edison organizations.

Conditions adverse to safety found during operations are reported as required by the plant Technical Specification. This report includes a description of the condition, its cause and corrective action taken or recommended. The distribution of this report includes the Nuclear Facilities Safety Committee.

5.2.12 Plant Records Management

Con Edison's policy is to maintain documentary evidence of the quality of items and activities affecting plant safety. Consequently, a system for records preparation and retention, as necessary, has been established.

Quality assurance records located in the Nuclear Records Management Center, together with other files of other Con Edison organizations and at contracted storage facilities are retained for periods specified in the Indian Point Records Type List.

Nuclear Quality Assurance maintains records which include certain personnel qualification records, and nonconformance reports. Operating logs are maintained by Operations. Test procedures and results are maintained by Test and Performance. Material Procurement maintains records of receipt inspections results and backup data.

Inspection reports include the signature of the inspector, the type of observation, the results, the acceptability, and the action taken in connection with any deficiencies noted.

Documented procedures establish the requirements and responsibilities for record maintenance and retention subsequent to completion of work. The records are filed and maintained to minimize deterioration, damage and to prevent loss.

5.2.13 Procurement and Materials Control

Measures have been established for procurement documentation and control of materials and components which affect plant safety, including spare and replacement parts. Procedures and appropriate instructions assure that purchased materials and components associated with safety-related structures or systems are purchased to appropriate specifications and codes; produced or fabricated to proper requirements; packaged and transported in a manner that will maintain their quality; properly documented, completed, identified and stored; and correctly controlled to assure the identification, segregation, and disposition of nonconforming material. These procedures, as appropriate, provide for procurement document preparation, review and change control; selection of procurement sources; bid evaluation and award; control of supplier's performance, verification of material quality, control of nonconforming items, acceptance of items and services, maintenance of quality assurance records; evaluation of the procurement process and corrective action.

Procurement documents include, as appropriate, provisions for the scope of work to be accomplished; technical requirements; quality assurance program requirements; a statement of right of access to a supplier's plant, facility and records; special quality assurance requirements; documentation and, as applicable, provisions for processing nonconformances.

5.2.13.1 Procurement Document Control

Measures are provided for a procurement document control system which assures that applicable regulatory requirements, design bases, and other requirements which are necessary to assure adequate quality are suitably included or referenced in the purchase orders for material, equipment and services, whether purchased by Con Edison or by vendors or sub-vendors. Nuclear Quality Assurance identifies quality assurance program requirements to be included or referenced in requests for quotations and purchase orders. These quality assurance program requirements are imposed on a vendor by means such as specifying applicable provisions of Con Edison's quality assurance specifications, the approved vendors quality assurance manuals, pertinent Code quality assurance requirements, such as, ASME Section III, ANSI N45.2 or unique requirements for the specific purchase order.

For procurement of items associated with plant modifications, Central Engineering or Nuclear Power as applicable, identify technical and regulatory requirements to be included or referenced in procurement documents.

In the case where Construction manages the project (ex. major capital projects), Construction prepares procurement documentation incorporating commercial requirements and the specified technical and regulatory requirements. These procurement documents are reviewed by Central Engineering to assure that they are technically correct and they are reviewed by Material Procurement to assure that they identify proper supplementary quality requirements.

Where Nuclear Power manages the project, Nuclear Power prepares the procurement documentation incorporating technical, regulatory and quality requirements. In these cases the documentation is reviewed by Material Procurement to assure that they are complete and adequate.

For procurement of replacement items Nuclear Power prepares the procurement documentation. This documentation is reviewed by Material Procurement to assure that they are complete and adequate.

As a minimum the review of procurement documents is accomplished by personnel other than the preparer.

Quality assurance requirements are imposed on contractors by specifying applicable Code quality assurance provisions such as ASME Section III, ANSI N45.2 or unique quality requirements for the specific requisition.

Purchasing or Material Procurement, as applicable evaluates Bids and Proposals for commercial content. Vendor exceptions to technical requirements are evaluated by Central Engineering or Plant Engineering as applicable. Vendor exceptions to quality assurance program provisions which have been stipulated by Nuclear Quality Assurance as a result of source evaluation activities shall be evaluated by Nuclear Quality Assurance. If the bidder or proposer takes no exceptions to the specifications and requirements, the buyer may secure purchase authorization.

Vendors are evaluated and approved prior to issuance of a purchase order to provide assurance that the vendor is capable of manufacturing and delivering a product conforming to the requirements of applicable purchase specifications. Vendor approval documentation is maintained and updated, and purchase orders sent only to the approved vendors. In cases, however, where commercial grade items or services are procured and Consolidat-

ed Edison assumes singular responsibility for verifying the acceptability of the item or service for use, the items or services may be procured from vendors who have not been evaluated or approved. After a purchase order is issued, the vendor may be reviewed on a surveillance basis during the manufacturing stage to assure conformance to specification requirements.

Upon receipt of purchase authorization, the cognizant buyer releases the requisition along with other appropriate documents e.g. Standard Terms and Conditions, for preparation of the purchase order. Copies of the purchase order are made available to Nuclear Quality Assurance and the requisitioning activity.

If an outstanding purchase order must be modified, a properly authorized modification to the Purchase Requisition must be prepared and reviewed. Copies of modified purchase orders are distributed to those who received copies of the original purchase order.

5.2.13.2 Control of Purchased Material, Equipment and Services

Measures have been established which assure that purchased items and services, whether purchased directly or through contractors, conform to procurement documents. These measures include provisions, as appropriate, for source evaluation and selection, objective evidence of quality furnished by the contractor, inspection and audit at the source and examination of items upon delivery.

Purchasing (or Material Procurement), Central Engineering, and Nuclear Quality Assurance evaluate the capabilities of approved vendors. Central Engineering evaluates the overall manufacturing capability of the vendor, including his particular technical ability to produce the item or component delineated in the specification. Purchasing or Material Procurement evaluates the vendor's financial and administrative capabilities. Nuclear Quality Assurance evaluates the vendor's quality assurance program. The Nuclear Quality Assurance review includes consideration of the following:

1. Quality assurance personnel qualifications,

2. Review and control of design documents,

3. Documented manufacturing procedures,

4. Quality assurance procedures, acceptance criteria and calibration practices,

5. Quality assurance records and their retention,

6. Vendor receipt inspection and,

7. Quality assurance requirements imposed by the vendor on his subcontractors.

For a vendor to be maintained as an approved vendor, an evaluation of that vendor is made at least once every five years. Additional reviews of a vendor's facilities or his performance may be conducted by Nuclear Quality Assurance on a more frequent basis. During the course of production, manufacturing or service activities, surveillance of the vendor's performance may be conducted.

Vendor surveillance plans are prepared for complex equipment. The surveillance plans identify the areas such as, tests and records to be reviewed. The applicable purchase order, including the specifications and drawings, forms the basis for determining the areas for review.

Material received at the Indian Point offsite receiving and storage facility is inspected by personnel in the Material Procurement group in accordance with written instructions developed and approved by Material Procurement. Documentary evidence that material and equipment conform to the procurement requirements is available at the plant site prior to use of such material and equipment. Receiving inspection written instructions require, as appropriate, checking that objective evidence of quality required from the vendor has been received. Results of receiving inspections are documented on a checklist.

This documentation includes, as a minimum, the identity of the inspector, the type and results of inspection, the acceptability, and the action taken in connection with any deficiencies noted.

The status of accepted material is identified by green tags, stickers or other approved methods which provide suitable traceability. Nonconforming material is yellow tagged until the nonconformance is dispositioned. If the disposition is to reject the material, the yellow tag is maintained on the material until the rejected material is returned to the supplier or scrapped. Nonconformance and corrective actions are controlled in accordance with 5.2.14. (9-5)

Accepted components or materials retain their status identification until they have been satisfactorily installed and the installation check has been completed or until it is necessary to remove the status identifier for installation purposes. Records of control of purchased material, equipment and services are maintained in accordance with 5.2.12.

5.2.13.3 Identification and Control of Materials, Parts and Components

Measures have been established for the identification and control of material, parts and components. Procedures are provided by Nuclear Power, Central Engineering, Material Procurement and, as appropriate, other involved organizations which insure that only accepted items are used and installed and which, where applicable, relate an item to an applicable drawing, specification or other pertinent technical document. Identification marking is applied by suppliers and/or Con Edison organizations in a clear, unambiguous manner which does not adversely affect the function of the item. When groups of items are sub-divided, identification marking is appropriately transferred to smaller groups or individual items by Central Stores storeroom personnel or NP personnel except for indication of inspection status identification ("accept" tags, etc.) which is transferred by Material Procurement or Nuclear Quality Assurance personnel.(9-6)

Where required for receipt identification and traceability purposes, materials and shipping containers bear specific marking prior to use at Indian Point.

Where such identification by the vendor is deemed necessary, the vendor is instructed by the Purchase Order documents concerning the identification required. In cases where identification is to be done by personnel at Indian Point, written instructions are issued to accomplish the identification.

Shipping containers are identified and marked by the vendor in accordance with instructions included in the purchase order document in order to permit positive identification. Component or material identification numbers may also be required for traceability and these requirements are also specified by the Purchase Order. Where it becomes necessary to provide identification of material or components, detailed marking procedures are established. These procedures, if applicable, are prepared by Central Engineering and reviewed by a qualified individual other than the preparer within Central Engineering. Care is taken to assure that marking methods will not adversely affect the material or design characteristics. For example, marking materials

containing sulfur and low melting point elements, such as, lead and mercury are not used for identifying nickel alloys and stainless steel. (9-1)

Care is also taken to apply the markings prior to modification or cutting operations to assure that traceability is not destroyed or lost. Nuclear Quality Assurance is responsible for verifying that marking performed at Indian Point is accomplished in accordance with approved procedures.

During the course of maintenance, repair, or modification work, it will be necessary for traceability purposes to identify new or repaired weld joints. This identification is accomplished in accordance with procedures approved by Central Engineering.

Central Engineering provides unique weld joint numbers for all welds shown on single line diagrams which carry piece numbers traceable to bills of material and weld joint numbers for piping fabrication and installation at Indian Point.

Construction is responsible for assuring that unique weld joint identification numbers are provided in accordance with Central Engineering's numbering system or Contractor's equivalent for welds of Construction managed field run piping work. Nuclear Power is responsible for assigning unique weld joint numbers for other welds required during installation and site fabrication including field run piping work managed by Nuclear Power and shall also be responsible for permanent weld identification.

The applicable Project Management Authority, Nuclear Power or Construction, shall assure that weld joint identification is accomplished by identifying the welds on piping sketches or drawings prepared by Central Engineering, Nuclear Power, or Contractors, as applicable, or where precise traceability cannot be assured by these methods, by permanently marking the weld at or near the weld joint. Where pipe size, accessibility or other limitations make physical marking impractical, metal tags shall be secured at or near the weld joint. The tags shall be permanently marked with weld identification information including directional information if tags are offset from the weld. The applicable Project Management Authority shall provide "as constructed" information to Central Engineering in writing for updating engineering drawings.

Adequate records of identification and control are retained for periods in accordance with 5.2.12 above.

5.2.13.4 Handling, Storage and Shipping

Measures have been established which provide control of handling, storage and shipping. These measures include, where applicable, provisions for cleaning, packaging and preservation of material and equipment in accordance with appropriate instructions, procedures, drawings or other documents to prevent damage, deterioration and loss. Included are measures for very expensive, critical, sensitive and perishable items. Central Engineering and other organizations, such as Nuclear Power establish or reference requirements for handling, storage and shipping. These requirements are identified in applicable requisitioning/procurement documents.

Items are packaged in a manner adequate to protect them against corrosion, contamination, physical damage or any effect which would lower their quality or cause the item to deteriorate during shipping, handling and storage. The specific requirements for packaging, etc., are determined by the procurement document review system and the requirements identified or referenced in the procurement document by Nuclear Power, Central Engineering, etc.

The degree of protection varies according to storage condition and duration, shipping environment and handling conditions. Items are protected against damage during loading, shipping, and handling by the supplier, shipper, and appropriate Con Edison organization. Modes of transportation are consistent with the degree of protection required and with the packaging methods employed.

Items are received at the Indian Point offsite receiving and storage facility. Central Stores personnel receive and store items for use at the site.

Upon their arrival, items are checked by Material Procurement personnel for damage and for general compliance with purchase order requirements or internal documents where items are manufactured by Con Edison. Results of inspection are documented in a receipt inspection checklist by the receiving inspector. Required marking is verified to provide positive identification during receiving, storage and installation.

Appropriate records relating to packaging, shipping, receiving, storage and handling are maintained by Nuclear Power in accordance with 5.2.12.

Storage is accomplished in a manner sufficient to minimize the possibility of damage or lowering quality due to corrosion, contamination, deterioration or physical damage from the time an item is stored until the time the item is removed from storage and installed at its final location. Storage requirements are based on supplier recommendations, Nuclear Power requirements and/or instructions supplemented, as appropriate, by Central Engineering recommendations.

Results of storage examination and inspections are documented and deficiencies corrected in accordance with established Nuclear Power procedures. During storage, appropriate care is exercised by Central Stores personnel to maintain item integrity. Central Stores is responsible for handling items. Power Generation Maintenance, Nuclear Power, and Central Stores maintain handling equipment in accordance with appropriate procedures, methods and instructions.

As appropriate, handling instructions and procedures have been established by Nuclear Power and Central Engineering for items requiring special handling. As appropriate, hoisting equipment used for handling is initially certified by the manufacturer. Except for test purposes, hoisting equipment is not loaded beyond rated load as certified by the manufacturer.

Safety requirements for material hoists are adhered to by Nuclear Power, Power Generation Maintenance and Central Stores. Re-rated equipment is given a dynamic load test over the full range of the lift. Normally, the test weight used in temporarily re-rating hoisting equipment for special lifts is at least equal to 110% of the lift weight.

Records pertaining to packing, shipping, receiving, storage and handling, including procedures, reports, personnel qualification, test equipment calibration, nonconformances and inspection and examination are prepared and maintained by Nuclear Power, Central Stores etc., in accordance with the provisions of 5.2.12 and applicable guides and regulatory requirements.

5.2.14 Nonconforming Items

A system, including appropriate instructions, has been established for identifying, documenting, segregating and

dispositioning nonconformances. This system provides for notification of affected organizations, for review and acceptance, rejection, repair or re-work of nonconforming items and establishes the responsibilities for the disposition of nonconforming items. This system also provides for identifying an item as nonconforming and controlled, as accepted "as is", as scrap or as held for further disposition. This system provides for documenting the acceptability of nonconforming items which have been repaired, reworked or used "as is".

Incoming items are tagged as received. The items are receipt-inspected in accordance with documented instructions by inspectors in Material Procurement. Items which are acceptable are given an "accept" tag, sticker, etc. and put in separate locked storage. Items which cannot be accepted are "hold" tagged and stored in segregated locked storage to await disposition. Items "hold" tagged but too large for segregated, locked storage or indoor storage are suitably identified to prevent their use. Items which are to be scrapped are also "hold" tagged and kept in separate locked storage until disposed of. Only items which have been properly receipt inspected and accepted can be used. Items which do not meet acceptance criteria are evaluated for disposition. Material Procurement, as appropriate, prepares a nonconformance report. The report identifies the nonconformance and recommends corrective action to the organization (action addressee) responsible to initiate action or resolve the nonconformance. Copies are forwarded or made available to affected organizations, such as Nuclear Power, Nuclear Quality Assurance, Central Engineering and Purchasing. Nonconforming items are accepted, rejected, repaired or reworked in accordance with documented procedures specified by the organizations involved in resolving the deficiencies identified.

When significant nonconformances are identified, Nuclear Quality Assurance personnel, or other personnel performing quality assurance functions (ex. Test and Performance NDE personnel), as applicable, investigate and initiate a significant nonconformance report. This report is used to document significant nonconformances with specified quality requirements when found during plant testing, or plant modification, maintenance and repair activities.

The significant nonconformance report identifies the deficiency and recommends corrective action to the organization (action addressee) responsible to initiate action or resolve the deficiency. Copies are forwarded to other affected organizations such as Nuclear Power, Nuclear Quality Assurance, Central Engineering, Purchasing or contractors. Non-conforming items are accepted, rejected, repaired or reworked in accordance with

documented procedures specified by the organizations involved in resolving the deficiencies identified. Items which have been reworked or repaired are reinspected and/or retested in a manner identical to the original inspection and/or test or in an alternate manner approved by Nuclear Power, Nuclear Quality Assurance or Central Engineering, as applicable. SNSC and Nuclear Quality Assurance participate, on a periodic basis, in systematic reviews of equipment malfunctions and their repairs. The reviews are based upon malfunction and repair information given in closed out nonconformance reports for the period. Results of the reviews including any recommended actions are documented and submitted, as a minimum, to the manager of the affected organization. Additionally, analysis of trends may be initiated independently by Nuclear Quality Assurance as part of its audit review program.

5.2.15 Review, Approval and Control of Procedures

The administrative controls and quality assurance program provide measures which control and coordinate the approval and issuance of documents, including changes thereto, which prescribe activities affecting quality. These documents include those which describe organizational interfaces or which prescribe activities affecting safety-related structure systems or components. These documents also include operating and special orders, operating procedures, test procedures, equipment control procedures, fire protection procedures, emergency procedures, maintenance or modification procedures, refueling and material control procedures. These are in the form of documents such as station administrative orders, administrative directives, Nuclear Quality Assurance operating procedures, Purchasing, Central Engineering and Construction procedures and corporate instructions.

The administrative controls and quality assurance program requires that activities affecting quality be prescribed by documented instructions or procedures of a type appropriate to the circumstances, and accomplished in accordance with these instructions or procedures.

The total program definition is reviewed by Nuclear Quality Assurance at least every two years to assure continued program adequacy.

Procedures or instructions are reviewed by other than the originating individual. Included in the review organizations are Nuclear Power, Central Engineering, Construction, Purchasing, Nuclear Quality Assurance, the Station Nuclear Safety Committee and the Nuclear Facilities Safety Committee. The Station Nuclear Safety Committee reviews changes to procedures or instructions to verify that such changes do not constitute an unreviewed safety question as defined in Section 50.59, 10CFR. Following an unusual incident during operations, testing, etc., an unexpected transient, significant operator's error or equipment malfunction or modification of a system, applicable procedures or instructions are reviewed by appropriate individuals or organizations. Changes to procedures or instructions are reviewed and approved by the appropriate organization. The system for review, approval and control of instructions or procedures provides for the identification of individuals and organizations involved, identification, as appropriate, of documents to be used in performing the activity, coordination and control of interface documents and the maintenance and updating of distribution lists.

These instructions or procedures include, as appropriate, quantitative or qualitative acceptance criteria for determining that certain activities have been satisfactorily accomplished. This administrative controls and quality assurance program establishes measures for controlling the issuance of documents such as procedures or instructions, including changes thereto, which prescribe activities affecting quality. These measures assure that documents, including changes, are reviewed for adequacy and approved for release by authorized personnel and are distributed to and used at the location where the prescribed activity is performed.

Each organization participating in this administrative controls and quality assurance program identifies to Nuclear Quality Assurance administrative documents judged necessary to implement the administrative controls and quality assurance program. The organizations responsible for these documents include Nuclear Quality Assurance on distribution as each is issued or changed. Nuclear Quality Assurance in a timely manner, reviews these documents for adequacy. In addition, Nuclear Quality Assurance maintains an index of documents that define the basic structure of the administrative controls and quality assurance program.

5.2.16 Control of Measuring and Test Equipment

Measuring tools, gages and test equipment used at the site on items which affect plant safety are controlled and recalled for calibration at prescribed intervals.

Nuclear Power and Nuclear Quality Assurance, as appropriate, maintain required standards, conduct calibrations, adjustments, and approves calibration procedures.

Nuclear Quality Assurance and Nuclear Power maintain records of measuring and test equipment under their control. These records include:

1. Identification number

2. Description of the item

3. Manufacturer's name and model number

4.. Calibration frequency

5. Reference to method or procedure

Only after items are listed on the measuring and testing list can they be used on Class A systems. Each measuring tool, gauge, and test equipment bears a tag or a sticker which indicates the next calibration due date.

Calibration requirements are based on the type of equipment, usage, and any other conditions affecting accuracy control requirements.

Calibrations are made against certified measurement standards which have a known relationship to national standards where such standards exist. Where no such standards exist, the basis for calibration is documented. The accuracy of each calibrating standard is at least equal to the accuracy requirement for the equipment being calibrated. If called for by engineering specification or drawing or other written instruction, calibrating standards of a specified greater accuracy will be used.

Discrepancies discovered in examination or test equipment are reported in accordance with procedures for reporting nonconformances and corrective actions. A documented review is initiated of all work accomplished with the equipment since the previous calibration. To determine if applicable requirements have been satisfied, a review is conducted of all material, components and equipment checked with discrepant examination or test equipment since its last acceptable calibration or periodic check. Nuclear Quality Assurance issues a nonconformance report if required.

5.2.17 Inspections

Programs for inspection of items and activities affecting safety have been established and are implemented by personnel reporting to Material Procurement, Test and Performance, Maintenance, Instrument and Control, Nuclear Quality Assurance, Construction and contractors working under their direction, or by other properly authorized personnel.

For plant maintenance and modification, examination, checks and inspections are normally accomplished by supervisors responsible for the work. When independent examinations are deemed necessary the examinations are accomplished by personnel who did not perform the work and who did not directly supervise the work.

Quality requirements, including inspection requirements are established by Central Engineering during development of modification documents, or Nuclear Power Projects and Planning during development of work instructions. Nuclear Quality Assurance and other organizations (ex. Test and Performance) conduct independent inspections to verify compliance as specified in work instructions.

Work inspection instructions identify the inspections, hold points and documentation required for a job. For large and complex work, travelers are issued by the Project Managing Authority (Construction or Nuclear Power). The travelers identify the operations to be performed on an item after it is drawn from Stores. Mandatory independent inspection hold points are also identified on the traveler.

The Director, Nuclear Quality Assurance has the authority to order cessation of work where continuation of work would lead to unacceptable conditions. Work may be resumed if approved by the General Manager, Nuclear Power Generation; or management levels above the General Manager.

The inspecting organizations maintain records of required independent inspection activities.

5.2.18 Control of Special Processes

Measures have been established and documented which assure that special processes are accomplished under controlled conditions employing appropriately qualified personnel and procedures.

Central Engineering prepares in-house welding procedures and acceptance criteria. Power Generation Maintenance qualifies welding procedures and personnel to applicable ASME Codes and maintains appropriate records in accordance with ASME Code Section IX.

Welding materials are specified, purchased, receipt inspected, stored, identified, and issued in accordance with written procedures. Central Engineering provides weld joint identification and authorizes weld modifications or repair.

For welds accomplished by Company forces at Indian Point or at Van Nest shops, the proper completion of weld inspection forms, weld inspection and acceptance, and permanent recording of weld acceptance, is the responsibility of the Nuclear Quality Assurance inspector or Power Generation Maintenance Quality Control inspector respectively.

For welds accomplished by contractor personnel, the contractor weld process control form for welds shall require the approval of contractor quality assurance personnel. As the welding proceeds, the appropriate section of weld inspection form shall be completed by the Nuclear Quality Assurance inspector or Power Generation Maintenance Technical Engineer Inspection and Quality Control, as appropriate, to indicate that inspection requirements have been satisfied and to provide permanent record of traceability of material and inspection information, as required.

Nuclear Power, Power Generation Maintenance, or Construction, as appropriate, prepare "as-constructed" information (marked-up drawings) showing weld locations and respective weld identification numbers. The "as constructed" information for modifications is forwarded to Nuclear Records Management Center which verifies that these drawings conform to the latest modification package drawing list and then forwards them to Central Engineering. Central Engineering revises the affected original drawings, and distributes copies to the Nuclear Records Management Center. Nuclear Power forwards "as constructed" information for repairs to Field Engineering for reporting to Central Engineering as necessary. Nuclear Quality Assurance monitors welding activities to assure compliance with approved procedures. Welding codes or requirements for work performed by contractors requires prior Engineering approval. Heat treatment is conducted in accordance with approved procedures.

The Director, Nuclear Quality Assurance or the Manager, Nuclear Power Test and Performance or their designees certify Level III Non-Destructive Examiners. Level III examiners are responsible for examinations of Level I and Level II personnel. All NDE personnel must meet the required physical fitness criteria, pass a written examination, satisfactorily operate test equipment and interpret or analyze collected indications. Central Engineering identifies the type of NDE to be performed.

Nuclear Quality Assurance or Test and Performance, as applicable, monitor NDE services to assure compliance with requirements and maintains appropriate records of work performed.

Chemical cleaning may be required during certain maintenance or modification work. The maintenance procedure identifies the approved process to be followed as well as any inspections and other controls required.

5.2.19 Test Control

Nuclear Power provides, and maintains control over operating procedures and test procedures to assure that they are appropriately prepared, authorized, implemented, documented and evaluated.

The plant Technical Specifications incorporate various engineering requirements and parameter limits that are applicable during operation of the plant. Procedures include measures to report conditions adverse to quality and to assure adequate corrective action. The NFSC reviews proposed changes to procedures which involve an unreviewed safety question as defined in Section 50.59, 10CFR50. Nuclear Power establishes procedures for indicating the status of inoperable equipment; for example, tagging valves and switches to prevent inadvertent operation.

A series of periodic tests have been prepared to satisfy the requirements of the plant Technical Specifications.

Test procedures contain:

(1) The test objective
(2) The acceptance or operability criteria to be used in evaluating test results
(3) Pertinent references, as appropriate
(4) Precautions
(5) Limitations
(6) Check-off sheets, as appropriate

(7) Technical specifications, as required
(8) Special equipment, as required
(9) Step-by-step instructions

Each test procedure is approved by Test and Performance.

Test and Performance sends a copy of the test procedure to the chairman of the Station Nuclear Safety Committee who arranges a SNSC review.

Once approved by the Station Nuclear Safety Committee, these test procedures are maintained in a central file and updated, as required, for possible future use.

Maintenance and preoperational test control consists of the following:

(1) Each Work Order issued for Class A items is evaluated for retest requirements by Test and Performance which provides such requirements as necessary.

(2) Prior to the test, Operations insures that all Work Orders to which the test applies have been signed off for work completion. Operations also assures that there are no unresolved conditions adverse to Quality for any item within the boundary of the test.

(3) For refueling or other major shutdowns, a total test program is developed including an overall schedule for tests to be performed. The program is based on a review of all Work Orders and associated test requirements by the appropriate organizational units.

(4) Test procedure results are submitted to Test and Performance for review. Test and Performance monitors test results to assure that data meet acceptance requirements.

Test and Performance monitors the performance of test procedures, as necessary, to assure that the tests are performed in accordance with written procedures.

Post-maintenance test results are evaluated by station personnel. When test results are deemed satisfactory, the Operations Watch Supervisor certifies the test results by signing and dating the appropriate sections of the approval sheet. The record copy of the test results and the applicable Work Order covered by that test are filed in the central record file. Test results are reported to Test and Performance for evaluation.

Nuclear Power prepares and controls operating records in accordance with requirements of the plant Technical Specifications. These records provide documentation for all operations, tests, inspections, shutdowns, changes and other pertinent activities associated with daily operations listed in the plant Technical Specifications. These records are maintained at the site in a manner convenient for review and are retained for five years or longer, as required by applicable codes or regulations.

5.3 Preparation of Instructions and Procedures

The administrative controls and quality assurance program is carried out in accordance with written instructions and procedures. These instructions and procedures are prepared by organizations participating in the program, i.e., Nuclear Power, Central Engineering, Construction, Purchasing, Nuclear Fuel Supply and Nuclear Quality Assurance and are reviewed, approved and controlled in accordance with 5.2.15.

These instructions and procedures describe activities affecting safety at the plant and provide an approved, preplanned method of conducting operations. Procedures are in documents such as general administrative directives, station administrative orders, administrative directives, plant technical procedures, Nuclear Quality Assurance procedures, Central Engineering and Purchasing operating procedures, Construction field directives and corporate instructions. Each instruction and procedure is of a detail appropriate to the circumstance and permits the user to perform the required activity without direct supervision; is appropriately titled, dated, and approved; contains a clear, concise statement of purpose; and, as appropriate, contains in its body the titles and identifying numbers of applicable reference documents; and identifies prerequisite activities, precautions to be taken, limitations to be applied, corrective action to be implemented, step-by-step instructions, acceptance criteria and check-off lists.

Procedures fall into the following general categories:

1. System procedures describing operation related to the safety of the plant.

2. General plant procedures providing instructions for the integrated operation of the plant.

3. Startup procedures which provide for starting the reactor from hot or cold condition and recovery from reactor trips.

4. Shutdown procedures which provide for controlled reactor shutdown or shutdown following reactor trips.

5. Power operation and load changing procedures which provide for steady-state power operation and load changing, including response to unanticipated load changes.

6. Process monitoring procedures which provide for monitoring plant system performance and which, as appropriate, identify limits for significant process parameters.

7. Fuel-handling procedures which provide for such activities as core alterations, refueling, fuel accountability, receipt and shipment of fuel and safety measures.

8. Maintenance procedures which provide for preparation for maintenance, performance of maintenance, post-maintenance checks and return to service, and maintenance records.

9. Radiation control procedures which provide for implementation of the radiation control program including the acquisition of radiation data, and which identify equipment for performing radiation surveys and for measurement, evaluation and assessment of radiation hazards.

10. Calibration and test procedures which provide for periodic calibration and testing of safety-related instrumentation and control systems and of measuring and test equipment used in activities affecting safety.

11. Chemical-radiochemical control procedures which provide for activities such as sampling and analyses, coolant quality maintenance, control of deleterious agents and for the control, treatment and management of radioactive wastes and the control of radioactive calibration sources.

12. Emergency procedures which provide guidance for operations during potential emergencies in a manner that will allow a trained operator to identify in advance the course of events signaling an emergency as well as describing the action he should take; and for distinguishing, at least initially, between abnormal and emergency conditions; for identifying symptoms of a particular kind of emergency condition; for automatic action; for immediate operator action; for subsequent operator action; and for categories of events of particular kinds of emergencies, such as loss of coolant.

13. Procedures for implementing the emergency plan which provide for assignment of authorities and responsibilities; protective measures; specific action; medical treatment; equipment requirements; identification of emergency communications network; description of alarm signals, restoration of the plant to normal conditions; and for testing of procedures, communications network and alarm system.

14. Test and inspection procedures which provide a description of objectives, acceptance criteria; prerequisite and special conditions, limiting conditions, the test or inspection procedure; specify any special equipment or calibration required; and which, as appropriate, identify hold points.

# APPENDIX A

## Class A Items

1. Core and Reactor Internals.

2. Control Rods and Control Rod Drives and Drive Housings.

3. Primary Coolant System.

   - Pressurizer System.
   - Primary Relief System.
   - Reactor Coolant Pump Shaft.
   - Reactor Coolant Pump Flywheel.
   - Reactor Coolant Pump Seals.
   - All pressure boundaries (vessels, pumps, piping and valves) through the second pressure boundary isolation device.

4. Secondary Coolant System.

   - Main Steam Lines up to and including the second Main Steam Isolation Valves (MS-2).
   - Main Feedwater System to the Steam Generator downstream of and including the system's second Isolation Valve.
   - Boiler Blowdown from the Steam Generators up to and including the system's isolation valves.
   - The Main Steam line to the Auxiliary Feedwater Turbine Drive.
   - Turbine Stop and Control Valves.
   - First Stage Turbine Pressure Transmitters.
   - Independent Electrical Overspeed Protection System.
   - Feedwater Regulator Valves (Main & Low Flow Bypass).
   - Main Boiler Feedwater Pump Motor Operated Discharge Valves (BFD-2-21 & BFD-2-22).
   - Main Steam Traps and Atmospheric Dump Drains and Silencer Drains.
   - Feedwater Leading Edge Flowmeters and associated pressure transmitters (PT-3101 through 3104).

5. Auxiliary Boiler Feedwater System.

   Includes:

   - Condensate Storage Tank, supply piping and valves to the Auxiliary Feedwater pumps.
   - City water to Auxiliary Feedwater pump up to and including valve CT-49.

6. Chemical and Volume Control System.

7. Containment Building.

   Includes:

   - Access air locks.
   - All piping and electrical penetrations.
   - Internal floors, walls and structural steel.

8. Containment Isolation System.

9. Containment Spray System.

10. Containment Air Recirculation Cooling and Filtration System.

11. Gaseous Waste Processing System.

12. Liquid Waste Processing System.

13. Nuclear Service Water System.

    - All cooling paths to and from nuclear safety related equipment.

14. Instrument Air System.

    - Compressor and associated equipment and essential air header to nuclear instruments, control and valves.
    - Closed Cooling Water System.

15. Fuel Handling System.

16. Reactor Control and Instrumentation System.

17. Reactor Protection/Trip System.

18. Sampling System.

    - Including only pressurized lines up to the second Containment Isolation Valve.

19. On-site Emergency A.C. Power System.

    Includes:

    - Electrical components and circuitry up to and including isolation devices for non-emergency loads.

    - Emergency Diesel Generators and Diesel General Auxiliary Systems, i.e., fuel oil, Cooling Water and Startup Air Systems.

    (6.9 Kv Buses and Lighting Systems are both Non-Class A.)

20. On-Site D.C. Power Systems.

    Includes:

    - Electrical components and circuitry up to and including isolation devices for non-emergency loads.
    - Batteries, battery chargers, D.C. power panels, D.C. distribution panels and associated cabling.

21. Process and Area Radiation Monitoring Systems.

22. Containment Penetration and Weld Channel Pressurization System.

23. Hot Penetration Cooling System.

24. Isolation Valve Seal Water System.

25. Post Accident Hydrogen Control System.

    Includes:

    - Hydrogen Recombiner System.
    - Post Accident Containment Vent System.
    - Containment Building Post Accident Containment Air Sampling System (H2-O2 Analyzers).

26. Safety Injection System.

    - High Head Injection for ECCS.
    - Low Head Injection for ECCS.
    - Recirculation and Containment Sumps.
    - Accumulators.
    - External & Internal ECCS Recirculation Systems.

27. Residual Heat Removal System.

    Includes:

    - Low head injection for ECCS.
    - External and Internal Recirculation Systems.
    - Recirculation & Containment Sumps.

28. Component Cooling System.

    Includes:

    - Auxiliary Component Cooling Pumps and Piping.

29. Refueling Water Storage Tank.

30. Spent Fuel Pool Cooling and Make-up System.

31. Ventilation/Filtration System for Areas Containing Safety Related Systems and Systems containing Radioactivity.

32. Reactor Vessel Service and Inspection Equipment.

    Includes:

    - Polar Crane.
    - Equipment that is used over the core and that could cause damage to the nuclear fuel assemblies during the time the reactor head is removed.
    - Reactor Vessel and head inspection tools.

33. Containment Sump System.

    Includes:

    - Sump Pumps.
    - Piping, flow and level Instruments.
    - Level Instrumentation in the reactor cavity sump.

34. Primary Coolant Leak Detection System.

35. Nitrogen Supply to Nuclear Equipment.

36. Hydrogen Supply to Nuclear Equipment.

37. Primary Water Makeup System.

38. Supports required for all the above listed items.

    Includes:

    - Structures and Seismic Restraining Devices.

39. All Regulating Systems, Controlling Systems and instrumentation used with the above listed items.

    Includes:

    - Indications used to determine operator action before (normal operation), during and following a postulated accident.

40. All items designed in Design Specification as per ASME Section III, Classes 1, 2 and 3, MC and CS.

41. All equipment performing Category 1 or 2 functions per Regulatory Guide 1.97.

42. Any fuses and circuit breakers which provide protection (limit electrical fault currents) for containment electrical penetrations.

**43. ATWS* Mitigation System Actuation Circuitry (AMSAC)
*ATWS - Anticipated Transient without Scram.

** Note:

In order to preclude the need to develop an AMSAC specific QA program, AMSAC equipment will be treated as "Class A", which for quality assurance purposes will invoke Con Edison's 10CFR50, Appendix B program. Should any aspect of our 10CFR50, Appendix B, QA program, prove overly restrictive or otherwise unnecessary, provision will be made to waive that aspect, provided that the quality assurance guidance contained in Generic Letter 85-06 is observed. Procedures which may waive provisions of 10CFR 50 Appendix B shall be developed for these unique situations and approved by the Executive Vice President, Central Operations per Section 3.2 of this Quality Assurance Program.

The following consumables are used in conjunction with the items listed above:

44. Diesel Generator Fuel Oil.

45. Boric Acid.

46. Lubricating Fluids whose loss could degrade critical components.

47. Demineralizer Resin.

Includes:

- Resins used in the Chemical and Volume Control Systems.

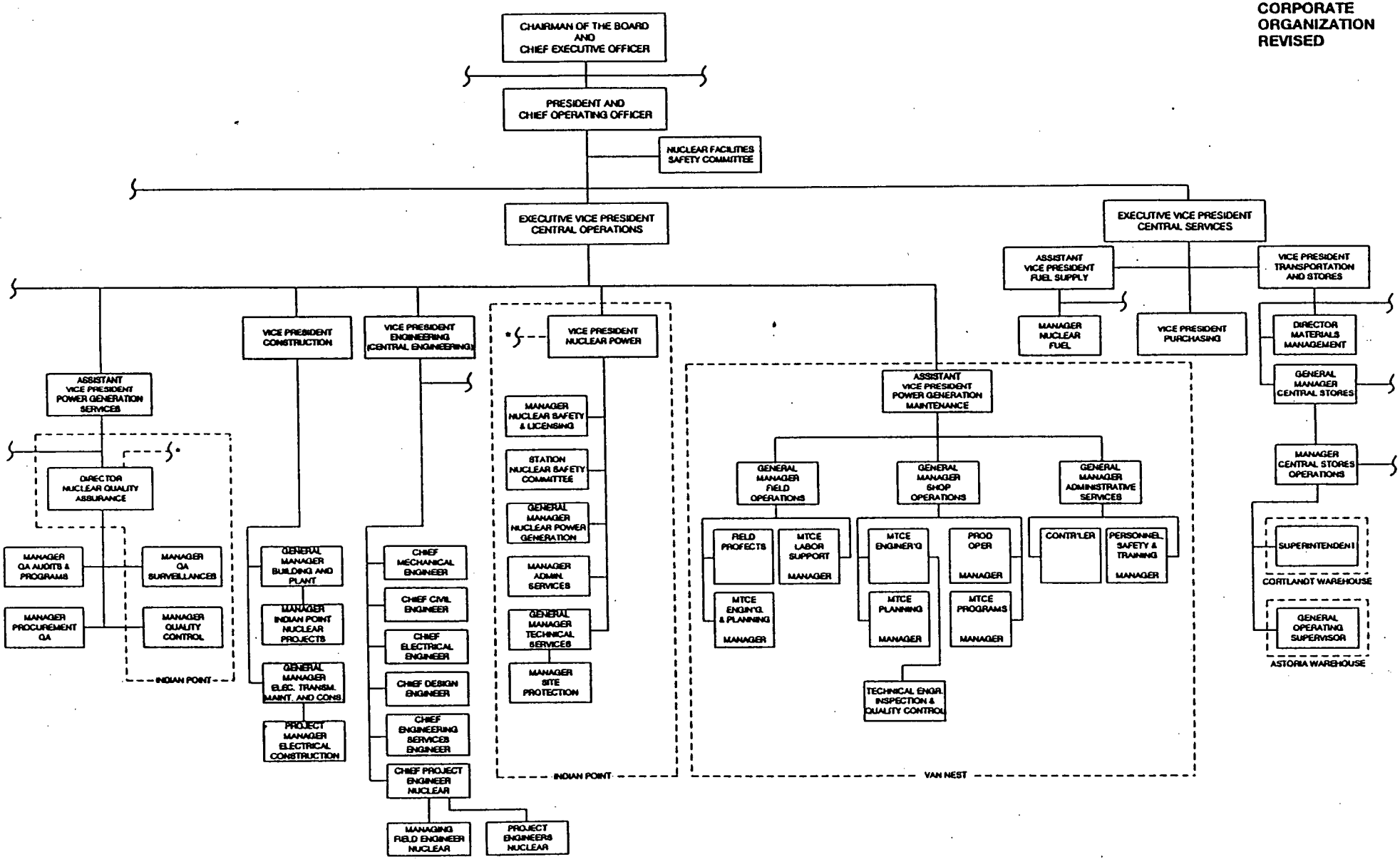
48. Sodium Hydroxide for use in the Containment Spray System.

49. Weld Rod and Weld Filler Material.

50. Hydraulic Snubber Fluids and Seals.

CHART A

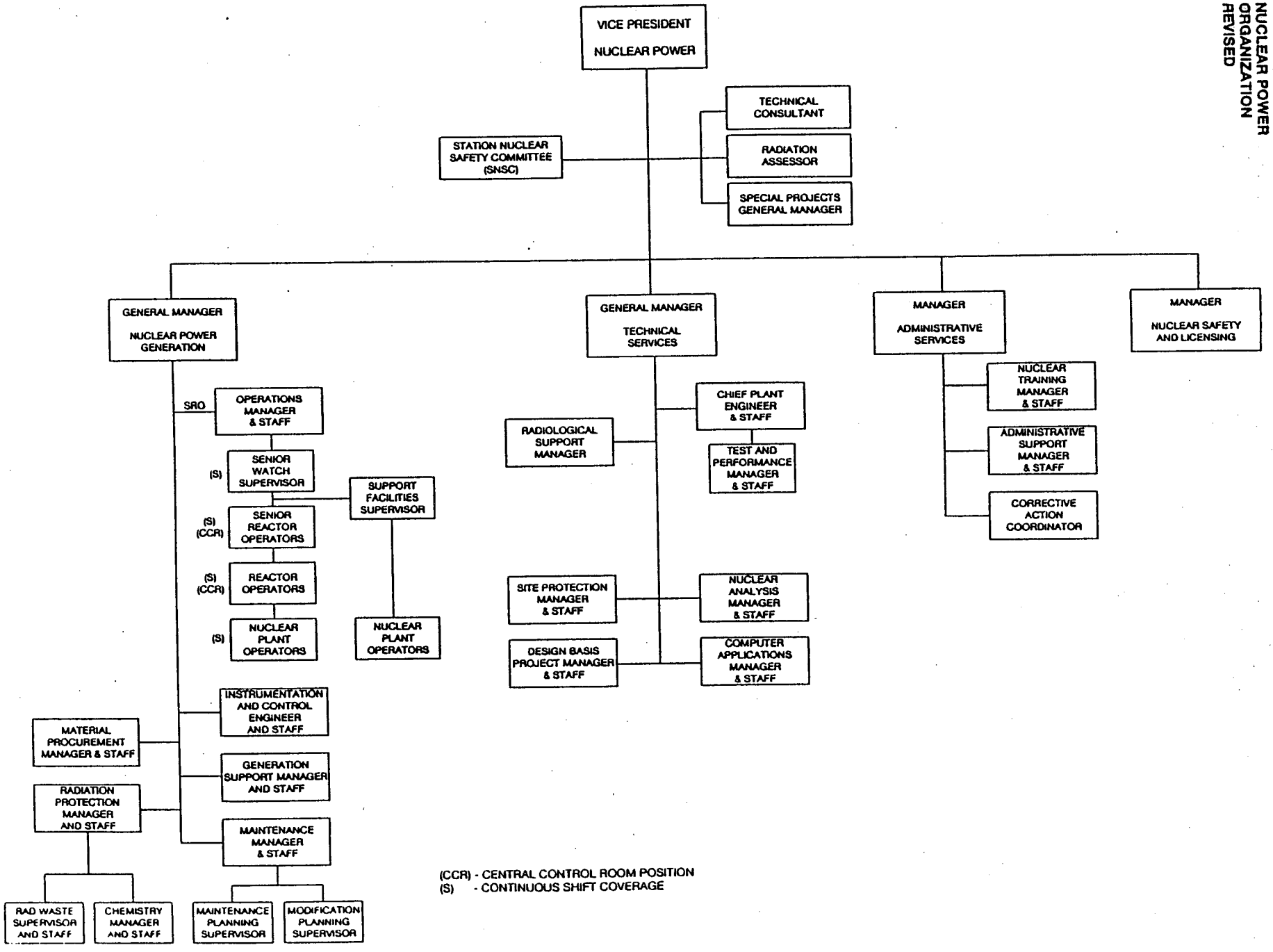
CORPORATE ORGANIZATION REVISED




* INDICATES THAT DIRECTOR, NUCLEAR QUALITY ASSURANCE HAS DIRECT COMMUNICATION ACCESS TO VICE PRESIDENT, NUCLEAR POWER

CHART B

NUCLEAR POWER ORGANIZATION REVISED




(CCR) - CENTRAL CONTROL ROOM POSITION
(S) - CONTINUOUS SHIFT COVERAGE

TABLE A

| Item No. | Regulatory Guide/ANSI Std. Reference | Requirement | Interpretation/Alternate/ Exception |
|---|---|---|---|
| 1. | General | Certain Regulatory Guides invoke or imply Regulatory Guides and standards in addition to the standard each primarily endorses. | The Con Edison commitment refers to the Regulatory guides (and the ANSI Standards they endorse) specifically identified in the "Foreword". Additional Regulatory Guides, other guides and similar documents implied or referenced in those specifically identified in the "Foreword" are not part of this commitment. |
| 2. | General | Certain ANSI Standards extend the scope of applicability to include systems, structures, and components whose satisfactory performance is required for a plant to operate reliably. | Our commitment to these standards applies only to those systems, structures, and components whose satisfactory performance is required to prevent postulated accidents that could cause undue risk to the health and safety of the public; or to mitigate the consequences of such accidents. Reliable operation of the plant may depend upon other systems structures and components which are not covered by this commitment. |

TABLE A

| Item No. | Regulatory Guide/ANSI Std. Reference | Requirement | Interpretation/Alternate/ Exception |
|---|---|---|---|
| 3. | General | NRC Regulatory Guides, and ANSI Standards do not provide for deviation from any requirement(s) when emergency or other urgent conditions make such deviation necessary. | The majority of ANSI Standards endorsed by the Regulatory Guides to which Con Edison has committed are concerned with the design and/or construction phases of nuclear power plants. Consequently, Con Edison has adapted these standards to its operations phase, where practicable, and has developed provisions for certain conditions not addressed in the standards.<br><br>In the event of an emergency condition which, if not promptly corrected could likely affect the health and safety of the public, the Vice President, Nuclear Power or his designated alternate(s) may authorize emergency repairs and deviations from written procedures. The nature of the emergency, its cause and the corrective action taken are documented.<br><br>Waivers to specific procedures may be authorized by the Vice President, Nuclear Power or his designated alternate if necessary to avoid significant loss of unit capacity with due consideration for public health and safety. Such waivers, including the need therefore, are documented.<br><br>The above provisions assure procedural control for by-passing critical inspections, tests, and operations. |

TABLE A

| Item No. | Regulatory Guide/ANSI Std. Reference | Requirement | Interpretation/Alternate/ Exception |
|---|---|---|---|
| 4. | General | Certain ANSI Standards contain requirements which, under certain conditions, may conflict with limiting personnel radiation exposure. | The majority of ANSI Standards endorsed by the Regulatory Guides to which Con Edison has committed are concerned with the design and/or construction phases of nuclear power plants. Consequently, Con Edison has adapted these standards to its operations phase, where practicable, and has developed provisions for certain conditions not addressed in the standards.<br><br>When conformance with particular standards requirements; e.g., cleaning of fluid systems, housekeeping, would conflict with limiting personnel radiation exposure, the degree of conformance to the standards is determined by appropriate levels of management. |
| 5. | General | Various standards require inspections, examinations and tests, but do not specify the frequencies of these activities. | Except in ANSI N45.2.5, the frequencies of required inspections, examinations and tests are not specified in the standards. Accordingly, the frequency of inspections, examinations and tests required by the standards - other than ANSI N45.2.5 - is identified on a job-by-job basis. The amount of inspections, examinations and tests identified is based upon the safety significance of the item involved. |

TABLE A

| Item No. | Regulatory Guide/ANSI Std. Reference | Requirement | Interpretation/Alternate/ Exception |
|---|---|---|---|
| 6. | ANSI N18.7 Section 5.2.2 | "Temporary changes which clearly do not change the intent of the approved procedure shall, as a minimum, be approved by two members of the plant staff knowledgeable in the areas affected by the procedures." | Temporary changes will be authorized per the provisions of the Administrative Controls Section of the plant Technical Specifications. |
| 7. | ANSI N18.7 First Sentence of 5.2.7 | (a) "Maintenance or Modification ... shall be performed in a manner to ensure quality at least equivalent to that specified in original - design bases and requirements, materials specifications, and inspection requirements...". | Requirements (a), (b) and (c), as a whole, require a degree of quality for replacement items consistent with their function. Our program allows this degree of quality to be more or less stringent than the original, provided the specified quality requirements are reviewed and approved by Central Engineering prior to use. |
| | First Sentence of 5.2.7.1 | (b) "A maintenance program shall be developed to maintain safety related structures, systems and components at the quality required for them to perform their intended functions." | |
| | ANSI NIB.7 Para (1) of 5.2.13 | (c) "Purchased to specifications and codes equivalent to those specified for the original equipment, or those specified by a properly reviewed and approved revision." | |

TABLE A

| Item No. | Regulatory Guide/ANSI Std. Reference | Requirement | Interpretation/Alternate/ Exception |
|---|---|---|---|
| 8. | ANSI N18.7 Section 5.2.14 | General requirements for nonconforming items. | Paragraph 5.2.14 applies to programmatic as well as to specific provisions of ANSI N18.7 and its associated references. Consistent with paragraph 5.2.14, our quality assurance program will contain provisions for controlled, documented waivers to its requirements. |
| 9. | ANSI N18.7 Section 5.2.13.1 | Requires certain provisions in procurement documents. | Per 5.2.13 procurement document contents for replacement items will be based primarily on original procurement document contents. The provisions of 5.2.13.1 will be included if required by original procurement document or warranted by performance of the item. Procurement document content for new items will meet the requirements of 5.2.13.1. When requirements of ANSI standards are included in procurement documents, the requirements may not be identified as excerpts from ANSI standards. Procurement documents are developed and reviewed in accordance with paragraph 5.2.13 of the Quality Assurance Program description. |

TABLE A

| Item No. | Regulatory Guide/ANSI Std. Reference | Requirement | Interpretation/Alternate/ Exception |
|---|---|---|---|
| 10. | ANSI N18.7 Section 5.2.13.1, (2) | "... drawings, specification and industrial codes and standards... shall be identified by titles and dates of issue...". | Drawings are identified by drawing number, revision number, and title. |
| 11. | ANSI N18.7 Section 5.2.13.1 1st Para. | Where changes are made to procurement documents, they shall be subject to the same degree of control as was used in the preparation of the original documents. | Consistent with the requirements of ANSI N45.2.11, paragraph 7.2, minor changes to (procurement) documents, such as, inconsequential editorial corrections, or changes to commercial terms and conditions may not require that the revised (procurement) document receive the same review and approval as the original documents. |
| 12. | ANSI N18.7 Section 5.2.17 | "Inspection shall be performed by qualified individuals other than those who performed or directly supervised the activity being inspected." | Examinations, checks, and inspections of work at Indian Point Station are normally accomplished and documented by Supervisors responsible for the work. Where independent examinations, checks, and inspections are determined appropriate, personnel who do not perform work and do not directly supervise the work are utilized. These independent examinations, checks, and inspections are comparable in extent to corresponding construction phase activities. |

TABLE A

| Item No. | Regulatory Guide/ANSI Std. Reference | Requirement | Interpretation/Alternate/ Exception |
|---|---|---|---|
| 13. | ANSI N18.7 Section 5.2.17 last paragraph, next to last sentence | Deviations, their cause, and any corrective action completed or planned shall be documented. | Consistent with the documentation requirements of Criterion XVI, Appendix "B" to 10 CFR 50, for corrective action, significant deviations, their cause and any corrective action completed or planned are documented. Results of inspections used to accept or reject items shall be documented in all cases. |
| 14. | ANSI N18.7 Section 6 References | "When the preceding American National Standards referred to in this document are superseded by a revision approved by the American National Standards Institute, Inc., the revision shall apply." | Our commitment to ANSI standards does not extend beyond the standards (date, revision, etc.) identified in that commitment. |
| 15. | ANSI N18.7<br>ANSI N45.2<br>ANSI N45.2.2<br>ANSI N45.2.13 | General and specific procurement requirements. | Alternate methods to those specified in these standards may be used in special cases to support procurement of items; e.g., those items urgently needed, items where commercial quality is sufficient or sole source items. In these cases, prior to procurement, exceptions to the standard requirements will be documented and concurred in by Central Engineering, Nuclear Power and Nuclear Quality Assurance. |

TABLE A

| Item No. | Regulatory Guide/ANSI Std. Reference | Requirement | Interpretation/Alternate/ Exception |
|---|---|---|---|
| 16. | ANSI N45.2.2 Section 2.1 | "The specific items to be governed by this standard shall be identified." | Items governed by this standard or portions thereof are identified on a case-by-case basis during the design document and procurement document development processes. |
| 17. | ANSI N45.2.2 Section 2.7 | Each of the specific items governed by this standard shall be classified into one of four levels. | All safety-related items are protected to an extent commensurate with their sensitivity and importance to safety, but are not specifically classified in various levels per the guidance of paragraph 2.7. Therefore, satisfaction of requirements for packaging, shipping, receiving, storage and handling for particular items could be different than those suggested. |
| 18. | ANSI N45.2.2 Subsection 3.9 | General marking requirements. | Some items are of a size, shape or consistency which preclude marking. Marking in such cases is applied to box or other enclosure. Tagging is employed, where necessary. |
| 19. | ANSI N45.2.2 Subsection 5.2.1 | "Preliminary visual inspection or examination shall be performed prior to unloading...". | Inspection after unloading is sufficient to determine the condition of many items. In special instances, preunloading examination is performed. |

TABLE A

| Item No. | Regulatory Guide/ANSI Std. Reference | Requirement | Interpretation/Alternate/ Exception |
|---|---|---|---|
| 20. | ANSI N45.2.2 Section 5.2.2 | The (receiving) inspections shall be performed in an area equivalent to the level of storage requirements for the item. | Receiving inspection is performed in a manner and in an environment which do not endanger the requisite quality of an item; however, receiving inspection area environmental-controls may be less stringent than storage environmental requirements for that item. |
| 21. | ANSI N.45.2.2 Paragraph 5.2.3 | ..."The 'Special Inspection' procedure, complete with documentation instructions shall be attached to the item or container...". | The "Special Inspection" procedure shall be readily available to inspection personnel and may be attached to the item or container. |
| 22. | ANSI N45.2.2 Paragraph 5.3.3 | "A statement documenting the authority and technical justification for the conditional release...shall be prepared...". | A statement documenting the authority and justification for the conditional release is prepared. Justification may not always be of a technical nature. |
| 23. | ANSI N45.2.2 Subsection 6.2.4 | The use or storage of food, drinks and salt tablet dispensers in any storage area is prohibited. | People working in storage areas have a right of access to water dispensers per OSHA requirements. Additionally, due to location and layout of the building, personnel temporarily store lunches in the workplace. This area is regularly policed for sanitation. |

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| Item No. | Regulatory Guide/ANSI Std. Reference | Requirement | Interpretation/Alternate/ Exception |
|---|---|---|---|
| 24. | ANSI N45.2.2 Appendix (A-3) A.3.9 (1) Second Group | "Container markings shall appear on a minimum of two sides of the container, preferably on one side and one end." | Containers are adequately marked for storage, identification and retrieval. Multiple marking requirements are imposed, where necessary. |
| 25. | ANSI N45.2.2 Appendix (A-3) A.3.9 (4) Second Group | "Container markings shall be... no less than 3/4" high container permitting." | Container markings are of a size which permits easy recognition. |
| 26. | ANSI N45.2.2 Appendix (A-3) A.3.9 (6) | "Container markings shall include the following information:" | The information required in container marking is evaluated on a case-by-case basis. Marking is adequate in each case. |
| 27. | ANSI N45.2.2 Appendix (A-3) Section A 3.5.1 (1) | "Non-metallic plugs and caps shall be brightly colored." | Non-metal plugs and caps are of a suitably visible color. |
| 28. | ANSI N45.2.2 Appendix (A-3) Section A 3.5.1 (5) | Plugs or caps shall be secured with tape or other means as necessary to prevent accidental removal. | In cases where plugs or caps do not snugly fit, additional securing devices or measures will be used. |
| 29. | ANSI N45.2.3 | Identifies various housekeeping requirements, including cleanliness, fire prevention and fire protection which must be accomplished during the progress of construction. | When this standard is applied, its requirements are implemented in those areas affected by work activities associated with modifications or maintenance as determined necessary by Central Engineering or Nuclear Quality Assurance. Remaining provisions of para. 5.2.10 of 18.7 will be adhered to. |

TABLE A

| Item No. | Regulatory Guide/ANSI Std. Reference | Requirement | Interpretation/Alternate/ Exception |
|---|---|---|---|
| 30. | ANSI N45.2.4 Section 3.0 | Preconstruction verification. | This section requires verification that items are in satisfactory condition for installation and have not suffered since initial receipt inspection. Documentation of that verification in addition to the documentation of the initial receipt inspection is not required. |
| 31. | ANSI N45.2.4 Section 5.2 | Identifies various tests to be performed. | Consistent with section 5.2 of IEEE 336, Draft 1, Revision 2, 1976, these tests will be performed "as appropriate" as determined by Engineering or Nuclear Power. |
| 32. | ANSI N45.2.4 Subsection 5.2.2 Mechanical Tests | "Mechanical tests shall be performed to ascertain that ...components or systems can withstand system pressure ratings." | For the plant operational phase "system pressure ratings" is interpreted to mean system operating pressure. For the Reactor Coolant System, Facility Technical Specifications identify testing requirements. |
| 33. | ANSI N45.2.4 Subsection 6.2.1 | "Items requiring calibration shall be tagged... indicating date of calibration and identity of person...". | Items requiring calibration are tagged indicating date of calibration. Identity of person that performed the calibration shall be indicated on tag or traceable through records. |
| 34. | ANSI N45.2.5 Section 2.5 | Requires periodic calibration of thermometers. | The initial accuracy of liquid-in-glass thermometers is established and, because of their inherent stability, they need not be "adjusted or calibrated at prescribed intervals". |

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| Item No. | Regulatory Guide/ANSI Std. Reference | Requirement | Interpretation/Alternate/ Exception |
|---|---|---|---|
| 35. | ANSI N45.2.5 Section 2.5.2 Second paragraph | "...when discrepancies... are found all items inspected shall be considered unacceptable." | Consistent with ANSI N18.7, 5.2.16 when devices are found to be out of calibration, an evaluation shall be made and documented concerning the validity of previous tests. |
| 36. | ANSI N45.2.4 Subsection 6.2.2 Systems Tests | "These tests shall be made to verify that all parts of a system properly coordinate with each other." | For the plant operation phase, this requirement is interpreted as not requiring that an entire system be re-tested after completion of modification of only a portion of that system. The testing requirements of the plant Technical Specifications are for inoperable equipment. |
| 37. | ANSI N45.2.5 Section 3.3.4 | "Inspections shall be performed to... verify that the process is suitable for the particular application. Verify that manpower, equipment and materials are available...". | Design controls verify qualifications of processes and suitability for particular applications. Verification of availability of manpower equipment, etc. is performed by project management rather than inspection personnel. |
| 38. | ANSI N45.2.5 Section 4.2 | This section specifies inspections of storage, handling facilities, stock piles, water, etc. | Quality of materials is verified prior to batching in lieu of these inspections. |
| 39. | ANSI N45.2.5 Section 5.4 | Various wrenches require calibration twice daily or weekly. | This requirement will be conformed with in the case of continued use. For intermittent use calibration frequency is based upon usage and calibration intervals may be greater than days or weeks. |

| Item No. | Regulatory Guide/ANSI Std. Reference | Requirement | Interpretation/Alternate/ Exception |
|---|---|---|---|
| 40. | Regulatory Guide 1.58<br>ANSI N45.2.6 | General requirements for inspection, examination and testing personnel. | NDE personnel meet the requirements of ASNT-TC-1A. Other personnel are qualified as discussed in Sections 3.3 and 3.4 of the Program Description. |
| 41. | ANSI N45.2.8<br>Section 3.2 | If checks disclose apparent loss of identification, affirm identification prior to release for installation. | We will check identification of an item prior to release for installation; however, option is maintained to knowledgeably install equipment lacking full identification providing deficiencies are resolved prior to its use; i.e., operation. Such action is recorded in quality control documents. |
| 42. | ANSI N45.2.9<br>Section 1.1 | This standard provides general requirements... of nuclear power plants. | The requirements of this standard will be applied to records generated after this standard is implemented. |
| 43. | ANSI N45.2.9<br>Section 1.4 | Definition of Quality Assurance Records. | This definition results in unreasonable requirements regarding time of application of the record system. Con Edison will introduce records into the system as soon as practical after completion of the document. |
| 44. | ANSI N45.2.9<br>Section 3.2.2 | The quality assurance records shall be listed in an index. | The types of quality assurance records shall be listed in an index. |
| | | The index shall indicate, as a minimum, record retention times, where the records are to be stored and the location of the records within the storage area. | In accordance with ANSI N45.2.9, paragraph 3.2.2, the index will indicate the location of the records within the record system. |

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| Item No. | Regulatory Guide/ANSI Std. Reference | Requirement | Interpretation/Alternate/ Exception |
|---|---|---|---|
| 45. | ANSI N45.2.9 Section 4.2 | A specific submittal plan shall be established for quality assurance records by management between the purchaser and supplier. | Purchase orders identify any particular record submittal requirements, as applicable. Acceptance of the purchase order by the supplier constitutes agreement with the purchaser. |
| 46. | ANSI N45.2.9 Sections 4.3, 4.4 and 5.3 | "... a receipt control system shall include:<br><br>1. A records checklist...<br>2. A record of ... records received.<br>3. Procedures for receipt and inspection of ... records.<br><br>... system shall permit ... assessment... status... of records.<br><br>... a method for verifying that records received are in agreement ... and are in good condition.<br><br>... a method of verifying that the records agree with pre-established records checklist." | We will provide these administrative controls for our Central Engineering, Nuclear Power and Nuclear Quality Assurance record storage area(s) but, where only a small number of non-permanent records are controlled by individual organization(s), these auxiliary administrative controls are unnecessary. |

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| Item No. | Regulatory Guide/ANSI Std. Reference | Requirement | Interpretation/Alternate/ Exception |
|---|---|---|---|
| 47. | ANSI N45.2.9 Section 5.4 | "Special processed records shall be stored... as recommended by the manufacturer of these materials." | In determining storage requirements, we will take into account recommendations of the manufacturer if available. Normally, these recommendations will be followed; however, a blanket commitment is impracticable as we must retain the flexibility for final determination of storage needs. |
| 48. | ANSI N45.2.9 Section 5.6 | "For storage of film... controls shall be provided... as recommended by the manufacturer." | See above. |
| 49. | ANSI N45.2.9 Section 5.5 | A full time security system shall be established to preclude the entry of unauthorized personnel into the storage area. This system shall guard against larceny and vandalism. | For the purpose of this commitment "storage area" is interpreted to mean a Con Edison facility which contains records; e.g., the Indian Point site, 4 Irving Place, etc., and "security system" is interpreted to mean security measures. |
| 50. | ANSI N45.2.9 Section 5.6 | Requires a "Facility" or duplicate records. | Non-permanent records need not be duplicated or stored in a "Facility" but are required to be stored per NFPA Class I record provisions. |
| 51. | ANSI N45.2.9 Section 6.2 | "Storage system shall provide for the accurate retrieval of information without undue delay." | In accordance with ANSI N45.2.9, paragraph 6.2, the storage system shall provide for the accurate retrieval of information. |

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| Item No. | Regulatory Guide/ANSI Std. Reference | Requirement | Interpretation/Alternate/ Exception |
|---|---|---|---|
| 52. | Regulatory Guide 1.88 | "When NFPA 232-1975 is used, Quality Assurance Records should be classified as NFPA Class I Records." | When a single record storage facility is maintained, permanent (lifetime) records will be afforded fire protection in accordance with NFPA Class I record provisions.<br><br>Fire protection in accordance with NFPA Class 2 provisions shall be provided for records designated as non-permanent. |
| 53. | ANSI N45.2.9 Section 5.6 | "An alternative to... a record storage facility... is... duplicate records stored in a separate remote location." | Our duplicate records may be stored in separate rooms distant from one another but within the same building providing their simultaneous exposure to hazards is unlikely.<br><br>If records are stored in the same building, protection will be provided to assure that simultaneous exposure to hazards is unlikely. |
| 54. | ANSI N45.2.9 Section 6.2 | A list shall be generated designating those personnel who shall have access to the files. | Lock and key controls, duplication of records in separate locations and other security measures could obviate the need for access lists. In cases where access lists are utilized, they are not required in all cases to identify specific individuals. |

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| Item No. | Regulatory Guide/ANSI Std. Reference | Requirement | Interpretation/Alternate/ Exception |
|---|---|---|---|
| 55. | ANSI N45.2.9 Section 7.2 | "Upon final transfer the owner shall... acknowledge receipt...". | Except for special cases as agreed to by Con Edison and the vendor, acknowledgement or receipt of vendor quality assurance records is unnecessary. |
| 56. | ANSI N45.2.9 Appendix A | Applicable Codes and Standards used in Design. | Codes and standards used in design are not considered records to be stored and controlled per the requirements of N45.-2.9. They will be stored and controlled in accordance with normal library practices. |
| 57. | ANSI N45.2.10 | "Quality Assurance Terms and Definitions." | Where terms defined in ANSI N45.2.10 are also defined in other standards to which Con Edison has referred via commitments to Regulatory Guides in the "Foreword" of the program description, the definitions in those other standards shall apply. |
| 58. | ANSI N45.2.10 | Definitions of "Certificate of Conformance" and "Certificate of Compliance". | Based upon the guidance of ANSI N45.-2.13, 10.2, the definitions of these two terms may be used interchangeably. |
| 59. | ANSI N45.2.10 | Definition of "Modification". | Modification - A change to an item's configuration, material(s) or function(s) such that the item does not conform to previously approved designed documents. |

TABLE A

| Item No. | Regulatory Guide/ANSI Std. Reference | Requirement | Interpretation/Alternate/ Exception |
|---|---|---|---|
| 60. | ANSI N45.2.11 Section 2.2 | Program procedures shall cover making experience reports available to cognizant design personnel. | A variety of experience reports from a number of sources are made available to design personnel without benefit of written procedures. |
| 61. | ANSI N45.2.11 Section 2.2 | "Program procedures shall cover necessary training of personnel performing activities covered by this standard." | Procedures describing technical training are unnecessary. However, our program includes procedures for programmatic training of Engineers. |
| 62. | ANSI N45.2.11 Section 6.3 | "The results of the review shall be documented... a number of basic questions that shall be addressed...". | Con Edison documents completion of the design verification activity, but does not necessarily document that each of the questions listed has been considered in the verification process. The subjects required to be considered during design review are identified in procedures. |
| 63. | ANSI N45.2.13 Section 5.2 | Specifies subjects to be evaluated during bid evaluation. | Except in special cases items d., e., and f. may be evaluated prior to submittal to bids. |
| 64. | ANSI N45.2.11 Section 3.1 | "Changes from specified design inputs including the reason for the changes shall be identified, approved, documented and controlled." | Changes from specified design inputs and quality standards are identified, approved, documented and controlled. The reasons for the changes need not be documented. |
| | Section 4.2 | "Changes from specified quality standards including reasons for the changes shall be identified, approved, documented and controlled." | |

TABLE A

| Item No. | Regulatory Guide/ANSI Std. Reference | Requirement | Interpretation/Alternate/ Exception |
|---|---|---|---|
| 65. | ANSI N101.4 | Identifies numerous detailed, specific requirements that must be accomplished in the course of procuring, applying and inspecting protective coatings. | When N101.4 is applied, new quality requirements will be developed based on its provisions, but specific requirements, such as documented site meetings, field demonstrations, substrate priming, applicator reporting, inspection reporting and report forms will be considered on a job-by-job basis. |
| 66. | Regulatory Guide 1.37 Section C.4 | Prohibits chemical compounds that contain chlorides, fluorides, lead, zinc, copper, sulphur or mercury. | Use of cleaning agents containing only trace amounts of these compounds is acceptable. |
| 67. | Regulatory Guide 1.64 Section C.2 | Restriction on design verification. | Considering the various duties of a supervisor, both administrative and technical, universal prohibition of design verification by the originator's supervisor is inappropriate. Design verification is performed by an individual(s) other than the originator if that individual(s) did not specify a singular design approach, rule out certain design considerations or establish the design inputs for the particular design aspect being verified. |

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| Item No. | Regulatory Guide/ANSI Std. Reference | Requirement | Interpretation/Alternate/ Exception |
|---|---|---|---|
| 68. | ANSI N45.2.12 | Requirements for Auditing of Quality Assurance Programs for Nuclear Power Plants. | This standard is primarily applicable to audits conducted of utilities' quality assurance programs by internal auditing organizations. Some of its provisions are impractical and unnecessary to apply when conducting vendor surveillance and vendor evaluations and in these cases all of the provisions of this standard will not apply. |
| 69. | ANSI N45.2.13 Section 4.2a | "Information which shall be evaluated shall include 1) Experience of users of identical or similar products of the prospective supplier." | "Experience of users" is interpreted to mean Con Edison or other utility experience at conventional plants and nuclear plants. |
| 70. | ANSI N45.2.13 Section 10.2 | General requirements for Certificate of Conformance. | Vendor certifications that do not necessarily contain all of the requirements of section 10.2 may also be used as a basis for receiving inspection. |
| 71. | ANSI N45.2.13 Section 10.2d | "The certificate shall be attested to by a person who is responsible for this quality assurance function and whose function and position are described in the Purchaser's or Supplier's quality assurance program." | Certificates may be signed at times by company president, staff personnel, or Engineering and not necessarily persons directly responsible for the quality assurance function as described in the supplier's quality assurance program. |

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| Item No. | Regulatory Guide/ANSI Std. Reference | Requirement | Interpretation/Alternate/ Exception |
|---|---|---|---|
| 72. | ANSI N45.2.13 Section 10.2e | "The certification system, including the procedures to be followed in filling out a certificate and the administrative procedures for review and approval of the certificates shall be described in Purchaser's or supplier's quality assurance program." | The vendors overall quality assurance program is reviewed during the vendor evaluation activity. Specific procedures related to the details of the certification system, if applicable, may not necessarily be reviewed. |
| 73. | ANSI N45.2.12 Section 10.2f | "Means shall be provided to verify the validity of suppliers certificates." | Verification of validity of suppliers certificates is conducted if past quality performance indicates the need for such verification. |
| 74. | ANSI N45.2.23 1.4.3 | An audit is a documented activity performed in accordance with written procedures or checklists to verify, by examination, that applicable elements of the quality assurance program have been developed, documented, and effectively implemented in accordance with specified requirements. An audit should not be confused with surveillance or inspection for the sole purpose of process control or product acceptance. | The requirements of ANSI N45.2.23 apply to personnel who perform audits involving quality assurance elements. They do not apply to personnel who perform audits involving compliance with Technical Specifications in areas such as Auxiliary Electrical Systems, Steam & Power Conversion and Containment Integrated Leak Testing etc., nor to personnel who perform vendor evaluations or surveillance. |

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| Item No. | Regulatory Guide/ANSI Std. Reference | Requirement | Interpretation/Alternate/ Exception |
|---|---|---|---|
| 75. | ANSI N45.2.23 2.3.1.1 | "...in addition score one (1) credit for a masters degree in engineering, physical sciences, business management, or quality assurance from an accredited institution." | Also score one (1) credit for a Masters Degree in mathematics. |
| 76. | ANSI N45.2.23 2.3.1.2 | "...if two (2) or more years of this experience have been in quality assurance, score two (2) additional credits, or...". | Also score two (2) additional credits for two (2) or more years reliability experience. |
| | | "...If two (2) or more years of this experience have been in nuclear quality assurance, score three (3) additional credits, or...". | Also score three (3) additional credits for two (2) or more years nuclear reliability experience. |
| 77. | ANSI N45.2.23 2.3.1.3 | "...Certification of competency in engineering, science, or quality assurance specialties issued and approved by a State Agency, or National Professional or Technical Society, score (2) credits." | Also score two (2) credits for ASQ certification as a Reliability Engineer. |

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| Item No. | Regulatory Guide/ANSI Std. Reference | Requirement | Interpretation/Alternate/ Exception |
|---|---|---|---|
| 78. | ANSI N45.2.23 2.3.2 | "...The prospective Lead Auditors shall have the capability to communicate effectively both written and oral. These skills shall be attested to in writing by the Lead Auditor's employer." | Separate attestment regarding communications skill shall not be made. Designation as Lead Auditor shall constitute indication of adequate communication skill. |
| 79. | ANSI N45.2.23 2.3.3 | "...Prospective Lead Auditors shall have training to the extent necessary to assure their competence in auditing skills." | Previous on-the-job training at prior companies, organizations or Con Edison shall constitute credit towards Lead Auditor designation. Contractor personnel used as Lead Auditors shall be certified by their employers whose training program shall have been reviewed and found satisfactory by Con Edison. |
| 80. | ANSI N45.2.23 2.3.4 | "The prospective Lead Auditor shall have participated in a minimum of five (5) quality assurance audits within a period of time not to exceed three (3) years prior to the date of qualification, one audit of which shall be a nuclear quality assurance audit within the year prior to his qualification." | Participation in vendor quality assurance program evaluations, vendor surveillance, site Nuclear Quality Assurance surveillance or ASME "N" stamp nuclear surveys, shall constitute credit towards meeting this requirement. |

TABLE A

| Item No. | Regulatory Guide/ANSI Std. Reference | Requirement | Interpretation/Alternate/ Exception |
|---|---|---|---|
| 81. | ANSI N45.2.23 2.3.5 | "...The prospective Lead Auditor shall pass an examination which shall evaluate his comprehension of and ability to apply the body of knowledge identified in paragraph 2.3.3." | Audit management may waive the requirements of ANSI N45.2.23, paragraph 2.3.4 and 2.3.5 requiring participation in audits and examination, when the individual has demonstrated, by past experience and/or knowledge, an obvious capability to conduct audits. |
| 82. | ANSI N45.2.23 3.2 | "Lead Auditors shall maintain their proficiency through one or more of the following: regular and active participation in the audit process; review and study of codes, standards, procedures, instructions, and other documents related to quality assurance programs and program auditing; participation in training programs. Based on management annual assessment, management may extend the qualification, required training, or require requalification. These evaluations shall be documented." | Participation in vendor quality assurance program evaluations, vendor surveillance, site Nuclear Quality Assurance surveillances, or ASME "N" stamp nuclear surveys, shall constitute credit towards maintenance of proficiency. Documented annual assessment of auditors is not required for personnel whose ongoing responsibilities include auditing, vendor evaluation, vendor surveillance, or site Nuclear Quality Assurance surveillances. |

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| Item No. | Regulatory Guide/ANSI Std. Reference | Requirement | Interpretation/Alternate/ Exception |
|---|---|---|---|
| 83. | ANSI N45.2.23 3.3 | "Lead Auditors who fail to maintain their proficiency for a period of two years or more shall require requalification. Requalification shall include retraining in accordance with the requirements of paragraph 2.3.3, reexamination accordance with paragraph 2.3.5, and participation as an Auditor in at least one nuclear quality assurance audit." | Management shall determine the basis for requalification on a case-by-case basis, and may elect to waive retraining, reexamination and audit participation based upon a review of the individual's knowledge and capability, prior performance and recent experience. |

TABLE B

| Item No. | Regulatory Guide/ANSI Std. Reference | Guideline | Interpretation/Alternate |
|---|---|---|---|
| | ANSI N45.2.1, 1973 "Cleaning of Fluid Systems..." | | |
| 1. | Subsection 3.1.1 | "Such items should receive their required level of cleanliness....". | This "should" is beyond the scope of this standard as indicated by the last sentence on the page. |
| 2. | Subsection 3.1.2.1 | Under "NOTE", "Localized rusting...should be evaluated metallurgically." | Laboratory type tests on localized rusting will be conducted when the need for such tests is determined by Central Engineering or Nuclear Quality Assurance. |
| 3. | Section 5 | The fourth "should" requires fabrication of a complete unit where inspection can be blocked.<br><br>The fifth "should" requires inspection of the completed unit immediately prior to closing access points. | The special fabrication and inspection requirements will be complied with as required by Central Engineering or Nuclear Quality Assurance. |
| 4. | Section 5 | The sixth "should" requires cleaning of surfaces before proceeding to the next installation or construction step. | The degree of surface cleanliness and the frequency of cleaning will be as determined by Central Engineering or Nuclear Quality Assurance. |

TABLE B

| Item No. | Regulatory Guide/ANSI Std. Reference | Guideline | Interpretation/Alternate |
|---|---|---|---|
| | ANSI N45.2.1, 1973 "Cleaning of Fluid Systems..." (cont'd) | | |
| 5. | Section 5 | The seventh "should" prohibits the use of mineral or organic acids on stainless steel. | Organic acids will be used only as permitted by Central Engineering. After their use, however, all residual traces of the acid will be removed. |
| 6. | Section 5 | The eighth "should" requires removal of local rusting from corrosion-resistant alloys by mechanical means. | When the need for removal of rust is determined, it shall be removed by mechanical means. |
| 7. | Section 6 | The second "should" requires personnel entering the system to wear clean outer clothing and shoe covers. | We interpret system to mean the primary coolant system. |
| 8. | Subsection 7.1 | The first "should" requires attachment of loose tools "to either the workman or the exterior of the system with a lanyard." | Loose tools will be controlled as specified by procedure or by Nuclear Quality Assurance. Precautionary measures such as barriers between work areas, and tool check-in and check-out controls may obviate the need for attachment. |

TABLE B

| Item No. | Regulatory Guide/ANSI Std. Reference | Guideline | Interpretation/Alternate |
|---|---|---|---|
| | ANSI N45.2.1, 1973 "Cleaning of Fluid Systems..." (cont'd) | | |
| 9. | Subsection 7.2.2 | The first "should" specifies a method for determining the effectiveness of alkaline cleaning. | When alkaline cleaning is performed, it will be accomplished in accordance with the requirements of Central Engineering. |
| 10. | Subsection 7.2.2 | The second "should" requires flushing of pockets and dead legs.<br><br>The third "should" requires that attention be given to removal of solution.<br><br>The fourth "should" requires system to be sealed. | When alkaline cleaning is performed, it will be accomplished in accordance with the requirements of Central Engineering. |

TABLE B

| Item No. | Regulatory Guide/ANSI Std. Reference | Guideline | Interpretation/Alternate |
|---|---|---|---|
| | ANSI N45.2.1, 1973 "Cleaning of Fluid Systems..." (cont'd) | | |
| 11. | Subsection 7.2.3 | The first "should" requires flushing to remove chelating agents.<br><br>The second "should" requires flushing of pockets and deadlegs.<br><br>The third "should" requires that attention be given to removal of solution.<br><br>The fourth "should" requires system to be sealed. | When chelate cleaning is performed, it will be accomplished in accordance with the requirements of Central Engineering. |
| | ANSI N45.2.2, "...Packaging, Shipping, Receiving, Storage, and Handling...". | | |
| 12. | Subsection 4.3.6 | Requires location and stacking limits to be specified on crates and boxes. | Consistent with the provisions of ANSI N45.2.2, 1972 Appendix "A", A.3.9.6 (e), such requirements will be specified, "as appropriate". |
| 13. | Appendix A, A.3.5.2. (1), (a) | Limits halogen and sulphur content of tape. | Central Engineering may allow the use of tapes containing greater amounts of halogen after appropriate evaluation. |

TABLE B

| Item No. | Regulatory Guide/ANSI Std. Reference | Guideline | Interpretation/Alternate |
|---|---|---|---|
| | ANSI N45.2.9, 1974 "...Records..." | | |
| 14. | Subsection 3.2.2 | The second "should" requires compatibility between the organization's system and the owner's system. | Special compatibility requirements of organization's records index system will be identified, where necessary, in procurement documents. |
| 15. | Subsection 5.6 | The first "should" requires that records shall be protected by NFPA, Class A, four hour minimum rated facility. | See Table A, Page A-16, #52. |
| 16. | Subsection 7.3 | Requires that non-permanent records be retained as specified in Appendix A. | Procedures will identify retention times of non-permanent records. |
| 17. | Regulatory Guide 1.58, Revision 1, 9.80 "...Examination and Testing Personnel" | Endorses the recommendations and requirements of ANSI N45.2.6, 1978. | See Table A, Page A-13, #40. |
| 18. | ANSI N45.2.5, 1974 "...Concrete..." Structural Steel ..." | The requalification procedure for cadweld splices should be identical to the original qualification procedure. | The content of the requalification procedure shall be determined by Central Engineering. |

Attachment II

Summary of Changes

The QAPD paragraphs that were changed are annotated at the end of the paragraph with the terms 9-1, 9-2, etc. The terms 9-1, 9-2, etc., refer to the applicable explanation for the changes as shown below. Minor editorial changes or corrections made in the QAPD are not discussed nor identified.

9-1 In accordance with Con Edison letter to the NRC dated 2/15/91 the following changes were made:

Section 5.2.13.3, page 35 - Sentence was clarified to read, "These procedures, if applicable, are prepared by Central Engineering, and reviewed by a qualified individual other than the preparer, within Central Engineering."

Section 5.2.6, page 16 - The following paragraph was added, as it was inadvertently deleted in the initial submittal of revision 8 of the QAPD.

"Upon completion of servicing work, operations personnel are responsible for verifying that the work is complete and that operating items are restored to prerequisite positions in accordance with applicable procedures."

Section 3.2, page 2 - The term "Engineering" was clarified to read "Central Engineering".

9-2 Section 5.2.7.2, page 21 - The following sentence was deleted. "DOEs are not used for modifications to Environmentally Qualified (EQ) equipment." This sentence previously precluded the use of the Determination of Equivalency (DOE) process for modifications of EQ equipment. This sentence has been deleted because administrative procedures have been revised to require evaluation and documentation of EQ related factors within the DOE process, such that the DOE process now contains proper controls for modification of EQ equipment and may be appropriately used for such activities.

9-3 Section 4.1, page 11 - An audit of the Fitness for Duty Program, nominally every 12 months, was added to the Audit Program to reflect the requirements of the Code of Federal Regulations (CFR), 10 CFR 26.

9-4 Section 5.2.8, page 25 - Paragraph was clarified to indicate that NDE personnel who perform ASME XI inservice examinations shall be qualified in accordance with the applicable edition of ASME XI as determined by 10 CFR 50.55a(g). The clarification was necessary because, in the same paragraph, the reference to SNT-TC-1A 1975 as a basis for qualification of NDE personnel did not fully reflect the requirements of 10 CFR 50.55a(g).

9-5 Section 5.2.13.2, page 33 - The first sentence of the last paragraph was revised to clarify that green tags are used on "accepted" material to distinguish between the use of yellow tags on "nonconforming" material as discussed in the next sentence.

9-6 Section 5.2.13.3, page 34 - The sentence in the first paragraph which discusses transferring of identification marking on subdivided material has been clarified to indicate that Central Stores storeroom personnel or Nuclear Power (NP) personnel may perform this function. Previously, the sentence incorrectly referred to NP storeroom personnel whereas Central Stores and not NP is responsible for storeroom activities.

9-7 Section 5.2.18, page 43 - The following sentence was deleted, "Con Edison Non-Destructive Examination personnel are qualified in accordance with ASME Code Section III and ASNT-TC-1A." The sentence was deleted because the reference to the Section III Code was incorrect and because the information provided was in part duplicative. NDE personnel are qualified as discussed in the last paragraph on page 25 in Section 5.2.8. See also changes as described in 9-4 above.

9-8 Section 3.2, page 3 - The position of Manager, Administrative Services has been deleted from the paragraph which describes the positions which are responsible for day-to-day operation, safety, security and maintenance. The Manager, Administrative Services was included in this paragraph because this position was previously responsible for day-to-day security. However, the responsibility for plant security was transferred to the General Manager, Technical Services as previously identified in revision 8 of this Quality Assurance Program Description which was approved by NRC letter dated March 11, 1991.