4E.100
Q-02784
October 8, 1985

IP Nuclear Power Construction
Quality Assurance Manual, Revision 14

Summary

Revision 14 of the IP Nuclear Power Construction Quality Assurance Manual (CQAM) reflects recent changes to the Illinois Power Organization and responsibilities. Editorial changes are also made throughout the CQAM.

Evaluation

The changes made to the QA program described in revision 14 of the CQAM do not involve a reduction in commitment previously submitted to the NRC. The CQAM should be submitted within 90 days in accordance with 10CFR50.55.

Submitted by _____
Supervisor - Quality Technical Support

Approved by _____
Manager - QA

8512060113 851125
PDR ADOCK 05000461
A PDR

IP NUCLEAR POWER
CONSTRUCTION Q.A. Manual
MATRIX OF REVISIONS

Revision 14

PAGE	PARA.	REASON FOR CHANGE
Chapter 2 5 of 11	A.5	Clarify responsibility for distribution list for Construction QA Manual
Chapter 3 3 of 5	A.2	Clarified responsibilities
Chapter 3 3 of 5	A.3	Organization title change
Chapter 4 3 of 3	A.5	Organization title change
Chapter 7 2 of 3	A.3	Organization title change
Chapter 11 1 of 3	I	Further defined the purpose of chapter 11
Chapter 14 1 of 2	I	Deleted pre-operational testing. Pre-op testing is covered under the operations QA program
Appendix B	N/A	Redefined responsibilities to comply with new organization

(LCF)

PAGE	PARA.	REASON FOR CHANGE
Chapter 1 10 of 17	A.15.2.1	Reassigned responsibilities for tracking 10CFR21 and 10CFR50.55(e) items to Manager - Nuclear Station Engineering
Chapter 1 10 or 17	A.15.2.2	Clarify responsibilities for timely and responsive corrective action
Chapter 1 11 of 17	A.15.3.1	Clarify responsibilities for timely and responsove corrective action
Chapter 1 12 of 17	A.15.3.2	Clarify receipt inspection and source surveillance responsibilities
Chapter 1 12 of 17	A.15.4	Added Director - Operations Monitoring Program
Chapter 1 12 of 17	A.15.6	Redefined Responsibilities
Chapter 1 15 of 17	Fig 1-1	Comply with site organization
Chapter 1 16 of 17	Fig 1-2	Comply with site organization
Chapter 1 17 of 17	Fig 1-3	Comply with site organization
Chapter 2 1 of 11	I	Deleted reference to preparations for commercial operations Added "construction" to define testing as construction testing

PAGE	PARA.	REASON FOR CHANGE
V	N/A	Incorporated the reference to chapter 17.1 of the FSAR
Chapter 1 2 of 17	B.5	Clarify to read as all inclusive of QA functions
Chapter 1 3 of 17	A.1	Comply with site organization - Deleted Senior Vice President
Chapter 1 5 of 17	A.7.2	Clarified responsibilities
Chapter 1 5 of 17	A.7.3	Organization change
Chapter 1 5 of 17	A.8	Reassigned Configuration Management to Nuclear Program Coordination. (Section A.6)
Chapter 1 6 of 17	A.11	Redefined responsibilities to comply with new organization
Chapter 1 6 of 17	N/A	Deleted Director - Project Controls, Director - Nuclear Support and Director - Nuclear Purchasing. Responsibilities are under Manager - Nuclear Planning and Support
Chapter 1 6 of 17	A.14	Added Manager - Licensing and Safety
Chapter 1 7 of 17	A.15	Clarified responsibilities & authority to Stop Work during all phases of the plant.

ILLINOIS POWER COMPANY
NUCLEAR POLICY STATEMENT

Quality Assurance

The Illinois Power Company (IP) Nuclear Power Construction, Operational, and American Society of Mechanical Engineers (ASME) Quality Assurance Programs have been developed by IP to assure that construction, operation and associated activities which affect the safety related functions of the Clinton Power Station (CPS) are conducted in a safe and reliable manner in compliance with the Code of Federal Regulations (10CFR50, Appendix B); the ASME Boiler and Pressure Vessel Code (Section III-Division 1); and other applicable regulations, codes, and standards. Control and surveillance requirements specified in the Construction, Operational and ASME Quality Assurance Manuals are to be applied by IP organizations and contractors participating in CPS construction and operational activities. The required personnel and resources are to be provided to assure that the quality assurance (QA) programs are adequately planned, implemented, and managed.

The Manager-Quality Assurance is responsible for developing, establishing, and maintaining the quality assurance program manuals. IP Managers and Directors are responsible for implementing the quality assurance programs in accordance with the requirements conveyed in these manuals according to their assigned functional responsibilities. The Manager-Quality Assurance has the organizational freedom and is responsible to identify problems, initiate corrective actions, verify implementation and assure control of activities which affect quality.

When concerns related to quality matters are not satisfactorily resolved with immediate supervision, personnel have direct access to the next higher level of management in the organization. If concerns are still not satisfactorily resolved, personnel have direct access to me for final resolution in accordance with applicable codes and standards.

Anyone that intimidates or interferes with any person performing Quality Assurance and Quality Control functions shall be subject to disciplinary action. Intimidation may take many forms ranging from verbal abuse to physical harm.

Personnel subject to or who perceive intimidation or interference have direct access to the Executive Vice President, who has the authority and responsibility to take appropriate disciplinary action.

APPROVED

Chairman and President

INFORMATION ONLY

AUTHORIZATION

This document shall be used in activities related to design and construction of the Clinton Power Station. It shall be maintained and updated as required by the Manager-Quality Assurance. Personnel assigned controlled copies of this manual shall be responsible for their maintenance and update in accordance with the provisions of Appendix B.

W.C. Gerstner

W.C. Gerstner, Executive Vice President

6/9/83

Date

INFORMATION ONLY

IP NUCLEAR POWER CONSTRUCTION
QUALITY ASSURANCE MANUAL

TABLE OF CONTENTS

INFORMATION ONLY

IP Nuclear Power Construction
Quality Assurance Manual Index

Revision 14

The following pages and their indicated revision number are included in the currently authorized IP Nuclear Power Construction Quality Assurance Manual.

Page No.	Rev.
i	11
ii	8
iii	11
iv	14
v	11
vi	6
1-1 - 1-17	12
2-1 - 2-11	12
3-1 - 3-5	14
4-1 - 4-3	12
5-1 - 5-3	10
6-1 - 6-2	10
7-1 - 7-3	12
8-1 - 8-2	10
9-1 - 9-3	11
10-1 - 10-3	11
11-1 - 11-3	12
12-1 - 12-3	11
13-1 - 13-3	11
14-1 - 14-2	12
15-1 - 15-3	12
16-1 - 16-2	10
17-1 - 17-3	11
18-1 - 18-3	10
A-1 - A-14	11
B-1	12
C-1 - C-2	11

INFORMATION ONLY

INTRODUCTION

The Illinois Power Company (IP), as principal owner of the Clinton Power Station (CPS), has developed and implemented the IP Nuclear Power Construction QA Program described in this manual for activities which affect the safety related functions of those structures, systems, and components which prevent or mitigate the consequences of postulated accidents that could cause undue risk to the health and safety of the public. IP will continue to fulfill its responsibility to ensure a composite effort consisting of its own quality assurance program augmented by the quality assurance program of its major contractors to cover appropriate CPS activities. The Nuclear Steam Supply System (NSSS) Vendor, the Architect Engineer (AE) and the Constructor are each responsible to IP for implementation of complementary quality assurance programs applicable to the scope of their individual areas of work. Each of these organizations will maintain a quality assurance program in compliance with applicable requirements. The IP Quality Assurance concept is that each party participating in CPS activities is responsible for its program and the program implementation to perform its designated work. IP monitors and audits the implementation of such programs to ensure total coverage and compliance.

This Manual represents chapter 17.1 of the FSAR and is the basic governing IP document for the quality assurance of design, procurement, fabrication, and construction activities for CPS. A separate manual will cover the quality assurance of pre-operational testing, operation, maintenance, and post-construction modifications activities. The program described herein requires preplanned systems of carefully documented checking, reviewing, qualifying, examining, inspecting, testing, auditing, or other verifying activities that provide reliable evidence of required quality. The objective of these activities is to obtain a plant which is in compliance with applicable regulatory, code, and technical standards requirements.

The basic regulations applicable to the IP Nuclear Power Quality Assurance Program are Part 50 Appendix B of "Title 10 - Chapter 1, Code of Federal Regulations, (10 CFR 50)", and the State of Illinois regulations, which stipulate adherence to the American Society of Mechanical Engineers Boiler and Pressure Vessel Code. In addition, ANSI N45.2, 1977, "Quality Assurance Requirements for Nuclear Power Plants", together with various interpretations and supplemental information in Nuclear Regulatory Commission Safety and Regulatory Guides, shall be applied as stated in the FSAR. These are the principal codes, standards, and technical bases for quality assurance requirements described herein.

This Manual is organized to follow the format of the "18 Criterion" of 10 CFR 50 Appendix B. Each chapter is divided into three main sections:

CONTROLLED COPY

I Purpose
II Requirements
III Division of Responsibility

Section II of each chapter is further broken into two parts - a discussion of (a) external interfaces, and (b) general requirements to be satisfied by IP and its contractors as applicable to their scope of work.

INFORMATION ONLY

Approved Wilford Cornell
Manager-QA

11 Oct 1985
Date

I. PURPOSE:

This chapter describes the organizational structures, functional responsibilities, and levels of authority of organizations related to the design, construction, procurement, inspection, and construction testing of safety related activities at the Clinton Power Station.

II. REQUIREMENTS:

A. Interface

Illinois Power Company directs and is responsible for the quality assurance activities in the design and construction of the Clinton Power Station. This responsibility is retained by IP even when it is necessary to obtain design, procurement, fabrication, construction, inspection, and related testing, consulting, and associated QA services from other organizations external to IP. Upon completion of construction and turnover of structures, systems, and components by the constructor, IP will direct and be responsible for performing the required checkout, initial start-up operation, pre-operational testing, and associated quality assurance/control functions. IP will obtain assistance from other organizations as necessary. Figure 1-1 depicts the organization of the Clinton Power Station project.

The major contractors involved with the design and construction of the Clinton Power Station are: Sargent & Lundy (S&L) - the Architect Engineer (AE); General Electric (GE) - the Nuclear Steam System Supplier (NSSS); and Baldwin Associates (BA) - the Field Constructor (Constructor). The organizational interface relationship between IP and the major contractors is reflected in Figure 1-2.

The relationships shown for the major contractors (S&L, GE, and BA) are equally applicable to other contractors. To accomplish the program objectives, the IP Quality Assurance organization monitors the QA organizations of the major contractors and

INFORMATION ONLY

consultants. This arrangement makes a wider range of skills available and decreases potential manpower limitations during periods of high activity.

B. General

The IP and contractors' organizations shall meet the following requirements:

1. The authority and responsibility of persons and organizations performing activities which affect quality, including the quality assurance personnel, shall be clearly established and delineated in writing.

2. Quality assurance organizations shall have sufficient freedom to identify quality problems, initiate, recommend, or provide solutions; to verify implementation of solutions; and to control further processing, delivery, installation, or utilization of nonconforming materials or items until proper dispositioning has occurred.

3. Any person who intimidates or interferes with any personnel performing quality assurance or quality control functions shall be subject to disciplinary action. Intimidation may take many forms ranging from verbal abuse to physical harm.

4. Quality problems shall be reported to appropriate management levels who will act to resolve the problems.

5. Those persons or organizations performing quality verification functions shall not have direct responsibility for performing the same work.

III. DIVISION OF RESPONSIBILITY:

Each organization participating in CPS activities is responsible for establishing a quality assurance program and the implementation necessary to perform designated work. Each contractor's quality organization shall be established in a manner consistent with its particular role in the overall CPS activities as stipulated by IP. Each contractor's quality assurance program shall be reviewed and approved by IP to ensure consistency with the IP Nuclear Power Quality Assurance Program. The organizations may have significant differences as can be seen by comparison of the organization charts of IP,

Sargent & Lundy, General Electric, and Baldwin Associates. To ensure effectiveness, IP Project Management and Quality Assurance shall function to coordinate interfaces among these organizations.

Quality assurance activities appropriate to their scope of work are assigned to Sargent & Lundy, General Electric, and Baldwin Associates. This, however, does not imply delegation of ultimate responsibility for overall quality assurance which remains with IP.

A. Illinois Power

Figure 1-1 depicts the line and staff functions of the IP Clinton Power Station organizational structure.

1. Chairman and President

The Chairman and President of IP has the overall responsibility for the engineering, design, procurement, construction modification, testing, operation, and quality assurance at CPS. Execution of these responsibilities is delegated to two Executive Vice Presidents.

2. Executive Vice President

An Executive Vice President is responsible for the overall effectiveness of the quality assurance program and for establishing quality assurance policies, goals, and objectives. The responsibilities to establish and maintain the IP Nuclear Power Quality Assurance Program as well as testing, startup, operations, nuclear support, nuclear purchasing, and engineering are delegated to a Vice President. The Executive Vice President is also responsible for assuring that annual management reviews are conducted and documented on the status, adequacy, and effectiveness of the overall QA program. The responsibilities for construction have been delegated to the Project Manager. The Executive Vice President shall retain the responsibility for assuring that the authority and independence of quality assurance personnel are such that they can effectively assure the conformance to quality requirements and are independent of undue influences and responsibilities for schedule and costs.

3. Executive Vice President

An Executive Vice President is responsible for quality related activities associated with environmental affairs. The responsibility to establish and maintain procedures which support the IP Nuclear Power Quality Assurance Program on safety related matters has been delegated to a Vice President.

4. Vice President

A Vice President has been designated as the corporate officer responsible for overall direction of the IP Nuclear Power Quality Assurance Program: the testing, startup, nuclear support, nuclear purchasing, and commercial operation of Clinton Power Station and those activities associated with the engineering of Clinton Power Station. He reports to an Executive Vice President and has direct access to the President.

5. Vice President

A Vice President has been designated as the corporate officer responsible for those activities associated with environmental affairs. The designated Vice President reports directly to an Executive Vice President. He has delegated this responsibility to the Manager-Environmental Affairs.

6. Manager-Nuclear Program Coordination

The Manager-Nuclear Program Coordination reports to a Vice President and is responsible for assisting the Vice President of the nuclear group in meeting regulatory requirements, commitments, and Illinois Power Company goals and objectives as necessary to support construction, start-up, operation, and modification of the Clinton Power Station in an efficient and timely manner.

7. Project Manager

A Project Manager has been designated as the person responsible for those activities associated with construction. The Project Manager reports to an Executive Vice President.

7.1 Construction Manager

The Construction Manager reports to the Project Manager and is responsible for the construction of the Clinton Power Station. He assures that construction interfaces between the constructor (BA) and IP are properly coordinated and documented such that effective communication and planning is maintained.

7.2 Assistant Project Managers

An Assistant Project Manager reports to the Project Manager and is responsible for advising the Project Manager on various quality assurance issues. An Assistant Project Manager reports to the Project Manager and has been assigned the responsibility for Baldwin Associates' Cost and Scheduling Departments.

7.3 Manager-System Release and Completion

The Manager-System Release and Completion reports to the Construction Manager and is responsible for direction of the program for completion and turnover of all systems, components, and equipment from Baldwin Associates to Illinois Power Startup.

8. Manager-Nuclear Station Engineering

The Manager-Nuclear Station Engineering reports to a Vice President and is responsible for the development, direction, and overall coordination of power plant engineering activities performed by the Nuclear Station Engineering Department for the Clinton Power Station. These responsibilities include: the preparation of specifications and drawings for the accomplishment of new designs, design changes, and modifications; design interpretation; the conduct of design checks and reviews; and technical evaluation of contractors and suppliers. The Manager-NSED ensures that these activities are performed in accordance with the requirements of the IP Nuclear Power Quality Assurance Program.

9. Power Plant Manager

The Power Plant Manager reports to a Vice President and is responsible for the safe, reliable, and efficient operation of the Clinton

Power Station in accordance with the operating license. This includes ensuring that the IP Nuclear Power Quality Assurance Program is incorporated into plant procedures and implemented by the Clinton Power Station organization.

10. Manager-Environmental Affairs

The Manager-Environmental Affairs reports to a Vice President and is responsible for providing technical support and assistance for ensuring that Clinton Power Station operations meet established guidelines and regulations regarding the plant's non-radiological effect on the environment.

11. Manager-Nuclear Planning & Support

The Manager-Nuclear Planning & Support reports to a Vice President and is responsible for schedule coordination and integration, human resources, support services, materials management, maintenance services, budgeting, site accounting, and program planning and scheduling. The Manager-Nuclear Planning and Support ensures that these activities are performed in accordance with the requirements of the IP Nuclear Power Quality Assurance Program.

12. Manager-Startup

The Manager-Startup reports to a Vice President and is responsible for Checkout and Initial Operation (C&IO) preoperational and acceptance testing, and for providing assistance to the Power Plant Manager for startup testing.

13. Director-Nuclear Training

The Director-Nuclear Training reports to a Vice President and is responsible for the direction and management of the Nuclear Training department for Clinton Power Station. Duties include developing training standards, providing centralized training, providing education support to Nuclear Managers/Directors and maintaining operation of the simulator.

14. Manager-Licensing and Safety

The Manager-Licensing and Saftey reports to a

Vice President and is directly responsible for providing representation and interface with regulatory agencies to obtain operating licenses for CPS, management of the Final Safety Analysis Report (FSAR) and the Environmental Report (ER), including certification and amendment submittals, management of the resolution of licensing issues, conduct of licensing reviews and studies, perform saftey studies and analysis, conduct of Independent Safety Evaluation Group (ISEG) efforts for significant operating data, provide representation to safety groups, support of the Nuclear Review and Audit Group (NRAG) and the administration of tracking programs for 10CFR21 and 10CFR50.55(e) items.

15. Manager-Quality Assurance

The Manager-Quality Assurance reports to a Vice President and has direct access to the Executive Vice President. The Manager-Quality Assurance is responsible for IP's overall quality assurance program definition, direction, evaluation, and approval, including the IP Nuclear Power Quality Assurance Program. The Manager-Quality Assurance directs the Quality Assurance departmental activities related to the design, procurement, construction, and operation of the Clinton Power Station. The Manager-Quality Assurance interfaces with the Nuclear Regulatory Commission, Office of Inspection and Enforcement, Region III, and the Authorized Inspection Agency for quality assurance activities. The Manager-Quality Assurance or a designated alternate has been delegated the responsibility and authority to stop unsatisfactory work during design, procurement, construction and operation provided the health and safety of the public or impact on capability to safely shut down the plant are not affected. The qualifications of the Manager-Quality Assurance are at least equivalent to the education and experience requirements of Section 4.4.5 of ANSI/ANS 3.1-1978, "Selection and Training of Nuclear Power Plant Personnel," or Section 4.4.5 of proposed draft ANS 3.1-1979. Specifically, the Manager- Quality Assurance will meet at least one of the following:

1. At the time of initial core loading or assignment to the active position, the responsible person shall have six years experience in the field of quality assurance, preferably at an operating nuclear power

plant, or operations supervisory experience. At least one year of this six years experience shall be nuclear power plant experience in the overall implementation of the quality assurance program. (This experience shall be obtained within the quality assurance organization.) A maximum of four years of this six years experience may be fulfilled by related technical or academic training; or,

2. EDUCATION:
Bachelor Degree in Engineering or related science.

EXPERIENCE:
At the time of initial core loading or appointment to the active position, the responsible person shall have four (4) years experience in the field of quality assurance, or equivalent number of years of nuclear plant experience in a supervisory position preferably at an operating nuclear plant or a combination of the two. At least one (1) year of this four years experience shall be nuclear power experience in the implementation of the quality assurance program. Six (6) months of the one year experience shall be obtained within the quality assurance organization. He must possess a thorough working knowledge of 10CFR50 Appendix B, ANSI N45.2 and ANSI N18.7 and familiarity with the ASME Boiler and Pressure Vessel Code, and other applicable regulations, codes, and standards.

15.1 Director-Quality Engineering & Verification

The Director-Quality Engineering & Verification reports to the Manager-Quality Assurance. He is responsible for direction and management of the Quality Operations & Maintenance, Quality Control, and Quality Technical Support staffs for defining, establishing, and verifying compliance with the IP Nuclear Power Quality Assurance Program.

1. QUALITY TECHNICAL SUPPORT SECTION

The Quality Technical Support Section is supervised by the Supervisor-Quality Technical Support who reports to the

Director-Quality Engineering & Verification. The Quality Technical Support Section assures that documents involving the following activities conform to the applicable QA program requirements of regulations, standards, codes, and other specific commitments: startup, engineering, radiation protection, and chemistry. The section establishes quality control inspection points in the aforementioned documents, as applicable. The Quality Technical Support Section is responsible for the planning and performance of surveillances on the aforementioned activities, as applicable, including ensuring timely and responsive corrective action to IP surveillance findings, and for advising management as to the effectiveness of quality assurance program implementation for those specific functions surveilled.
If significant quality problems are identified, the Supervisor-Technical Support has the responsibility to recommend to IP management to STOP WORK pending satisfactory resolution of the identified problem.

2. QUALITY CONTROL SECTION

The Quality Control Section is supervised by the Supervisor-Quality Control who reports to the Director-Quality Engineering & Verification. The Quality Control Section is responsible for conducting and reporting inspections and nondestructive examination of items or processes associated with startup, testing, maintenance, modification, nuclear fuel, and plant support activities performed by IP which affect quality. The Quality Control Section is also responsible for initiating reports of nonconforming items or conditions discovered during inspections. If significant quality problems are identified, the Supervisor-Quality Control has the authority and responsibility to hold or curtail and control further processing, delivery, or installation of nonconforming material, provided the ability to place the plant in a safe and stable condition is not affected.

3. QUALITY OPERATIONS & MAINTENANCE SECTION

The Quality Operations & Maintenance Section is described in the IP Nuclear Power Operational Quality Assurance Manual.

15.2 Director-Quality Systems & Audits

The Director-Quality Systems & Audits reports to the Manager-Quality Assurance and is responsible for providing direction and administration of the Quality Systems, Audits, and Traveler Tracking staffs in defining, establishing, and verifying compliance with the IP Nuclear Power Quality Assurance Program.

1. QUALITY SYSTEMS SECTION

The Quality Systems Section is supervised by the Supervisor-Quality Systems who reports to the Director-Quality Systems & Audits. The Quality Systems Section is responsible for periodically assessing departmental effectiveness in implementing the IP Nuclear Power Construction Quality Assurance Program, trending of conditions adverse to quality, and coordination of Quality Assurance reviews and approvals of QA program requirements associated with the QA manual and Corporate Nuclear Procedures. The section is also responsible for the coordination and administration of QA/QC training programs for department personnel.

If significant quality problems are identified, the Supervisor-Quality Systems has the authority and responsibility to recommend to IP management to STOP WORK pending satisfactory resolution of the identified problem.

2. AUDIT SECTION

The Audit Section is supervised by the Supervisor-Audits who reports to the Director-Quality Systems & Audits. The Audit Section is responsible for the planning, scheduling, and conduct of internal and external IP audits. The section performs followup action to ensure that the audited organization provides timely and responsive corrective action to IP audit findings. The section also advises management as to the effectiveness of quality assurance program

implementation for those specific functions audited.

If significant quality problems are identified, the Supervisor-Audits has the authority and responsibility to recommend to IP management to STOP WORK pending satisfactory resolution of the identified problem.

3. TRAVELER TRACKING SECTION

The Traveler Tracking Section is supervised by the Supervisor-Traveler Tracking who reports to the Director-Quality Systems & Audits. The Traveler Tracking Section is responsible for ensuring travelers are allotted, controlled, and tracked in accordance with established guidelines and procedures.

15.3 Director-Construction & Procurement Quality Assurance

The Director-Construction & Procurement Quality Assurance reports to the Manager-Quality Assurance. He is responsible for direction and management of the Construction QA and Procurement QA staffs. In this position he is responsible for defining, establishing, and verifying compliance with the IP Nuclear Power Quality Assurance Program.

1. CONSTRUCTION QUALITY ASSURANCE SECTION

The Construction Quality Assurance Section is supervised by the Supervisor-Construction Quality Assurance who reports to the Director-Construction & Procurement QA. The Construction QA Section is responsible for planning, scheduling, conducting, and reporting surveillances of activities associated with the construction of Clinton Power Station. The section performs followup action to ensure that the organization surveilled provides timely and responsive corrective action to IP Construction QA surveillance findings. The section advises management of the effectiveness of QA program implementation for those specific functions surveilled. The section is also responsible for assuring that

documents such as subcontractor QA manuals, procedures, and instructions conform to codes, standards, regulations, and other specific commitments. Additionally, this section reviews reports of selected nonconformances and their dispositions.

If significant quality problems are identified, the Supervisor- Construction Quality Assurance has the authority and responsibility to recommend to IP management to STOP WORK pending satisfactory resolution of the identified problem.

2. PROCUREMENT QUALITY ASSURANCE SECTION

The Procurement Quality Assurance Section is supervised by the Supervisor-Procurement Quality Assurance who reports to the Director-Construction & Procurement QA. The Procurement Quality Assurance Section assures that procurement documents contain the QA requirements of the FSAR, evaluates suppliers' QA programs for meeting the FSAR commitments, performs surveys at suppliers' facilities, processes procurement related nonconformances, performs source surveillances, performs receipt inspections, and reviews and approves vendor working procedures.

If significant quality problems are identified, the Supervisor-Procurement Quality Assurance has the responsibility to recommend to IP management to STOP WORK pending satisfactory resolution of the identified problem.

15.4 Director-Operations Monitoring Programs

The Director-Operations Monitoring Programs reports to the Manager-Quality Assurance. He is responsible for providing assistance to the Manager-Quality Assurance in the development and implementation of Quality Assurance Operations Monitoring Programs that meet regulatory requirements, commitments, and support the safe and reliable operation of CPS.

15.5 Supervisor-Welding, NDE & Testing

The Supervisor-Welding, NDE & Testing reports to the Manager-Quality Assurance and is responsible for performing and reporting "overinspection" of accepted plant hardware, and the site testing laboratories for weld testing and NDE.

15.6 Administrative Supervisor

The Administrative Supervisor reports to the Manager-Quality Assurance. He is responsible for the administrative functions of the Quality Assurance department.

B. Sargent & Lundy

1. Sargent & Lundy has an organization which provides for the Balance of Plant (BOP) design. Additionally, Sargent & Lundy has available to IP technical resources to assist in the review of the NSSS, provide engineering support for construction and startup, and provide technical assistance on engineering work and procurement activities.

2. Sargent & Lundy has a Project Manager assigned for CPS who interfaces between IP and the Sargent & Lundy organization. He is responsible for transmitting the IP requirements to the appropriate Sargent & Lundy organizations and assuring that the commitments have been met.

C. General Electric

1. General Electric has an organization which provides the design and fabrication of the NSSS and nuclear fuel.

2. General Electric has a Project Manager who administers the contract for NSSS equipment through the 100 hour Plant Warranty Run.

3. General Electric has a Project Manager who administers the contract for the nuclear fuel fabrication.

4. General Electric has a Site Construction Manager to coordinate field installation of General Electric scope equipment.

D. Baldwin Associates

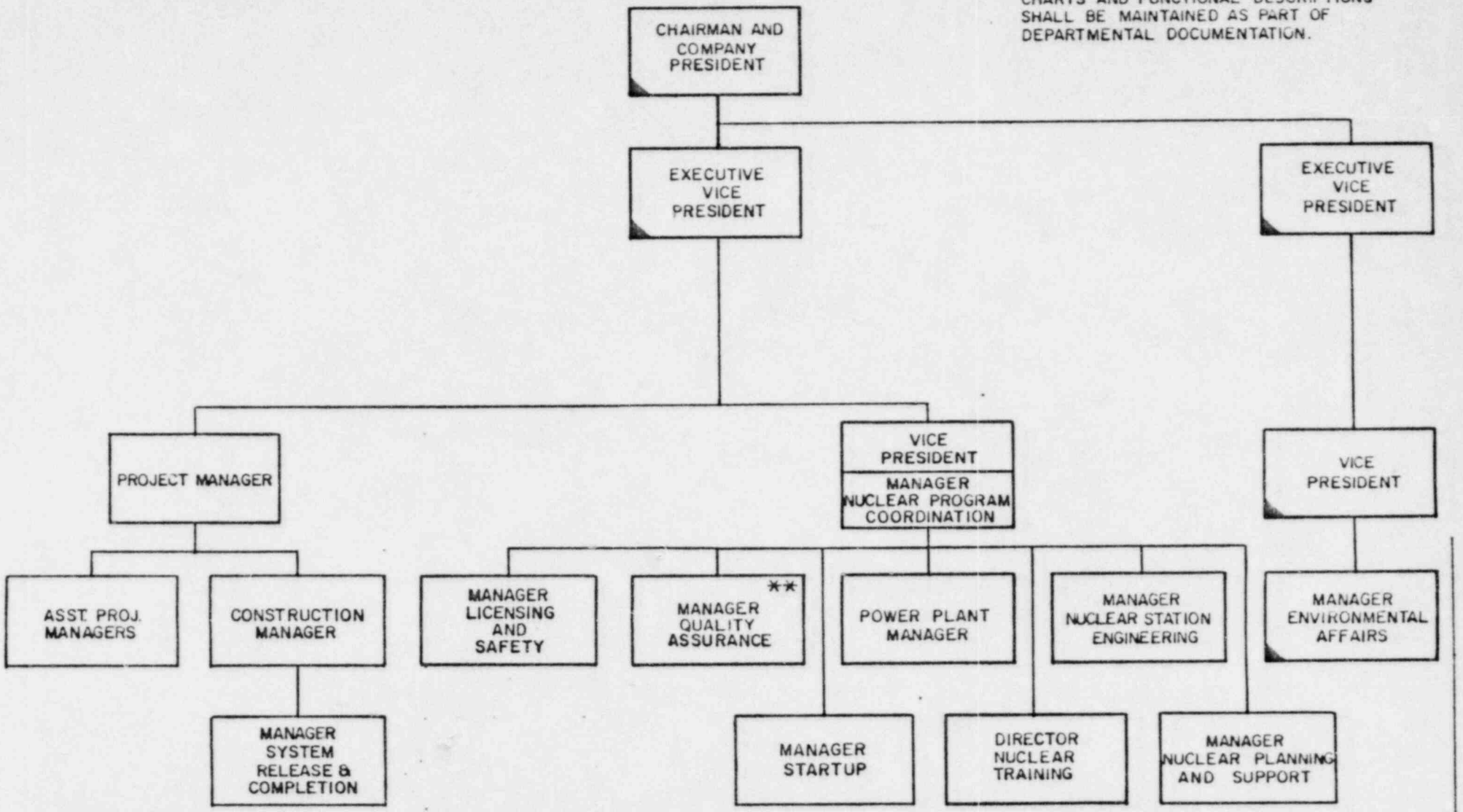
1. Baldwin Associates has an organization which provides field construction. Construction activities contracted separately by IP and General Electric are not subject to control by Baldwin Associates; however, Baldwin Associates retains cognizance and coordination of interfaces.

2. Baldwin Associates has a Clinton Project Manager who is the interface between IP and the Baldwin Associates organization. He is responsible for managing the construction forces to assure that CPS is built in accordance with the approved specifications and drawings.

3. Baldwin Associates has a Clinton Manager of Quality & Technical Services independent of the BA Clinton Project Manager. He is responsible for the activities of the Quality Assurance, Quality Control, and Technical Services Departments. The Baldwin Associates Manager of Quality & Technical Services is the interface between the Baldwin Associates quality organization and the IP Quality Assurance organization. The Baldwin Associates Manager of Quality & Technical Services receives project direction from the IP Vice President (Nuclear) on matters related to quality.

IP ORGANIZATIONAL CHART OF CPS PROJECT

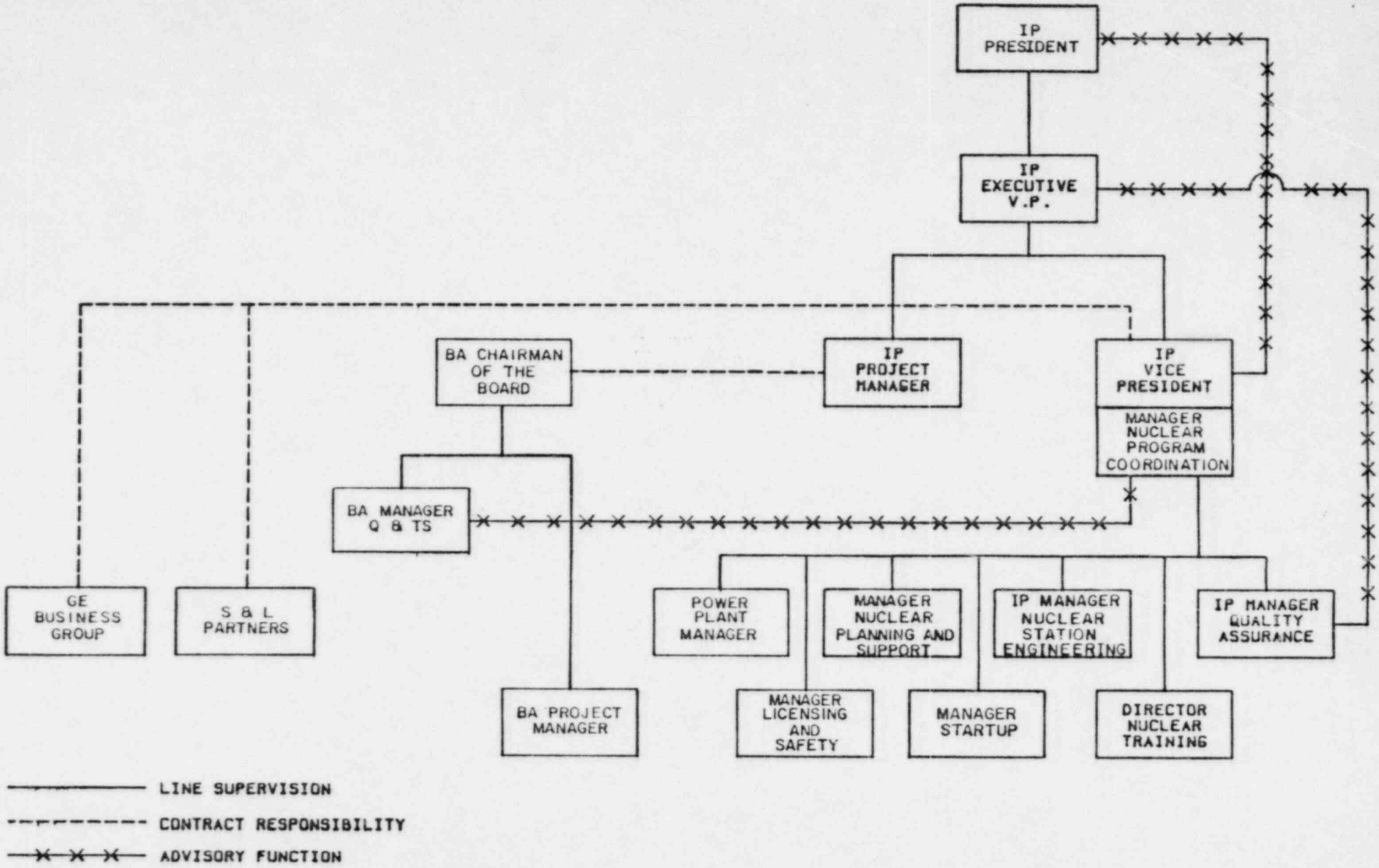
NOTE: UP-TO-DATE DEPARTMENTAL ORGANIZATIONAL CHARTS AND FUNCTIONAL DESCRIPTIONS SHALL BE MAINTAINED AS PART OF DEPARTMENTAL DOCUMENTATION.



** THIS FUNCTION HAS DIRECT ADVISORY REPORTING RESPONSIBILITY TO THE COMPANY EXECUTIVE VICE PRESIDENT

THIS SYMBOL DESIGNATES OFF SITE ORGANIZATION

FIGURE 1-1



ORGANIZATION INTERFACE RELATIONSHIP-
IP AND MAJOR CONSTRUCTION CONTRACTORS

FIGURE 1-2

PWRPLT1-CLT14
10-29-8

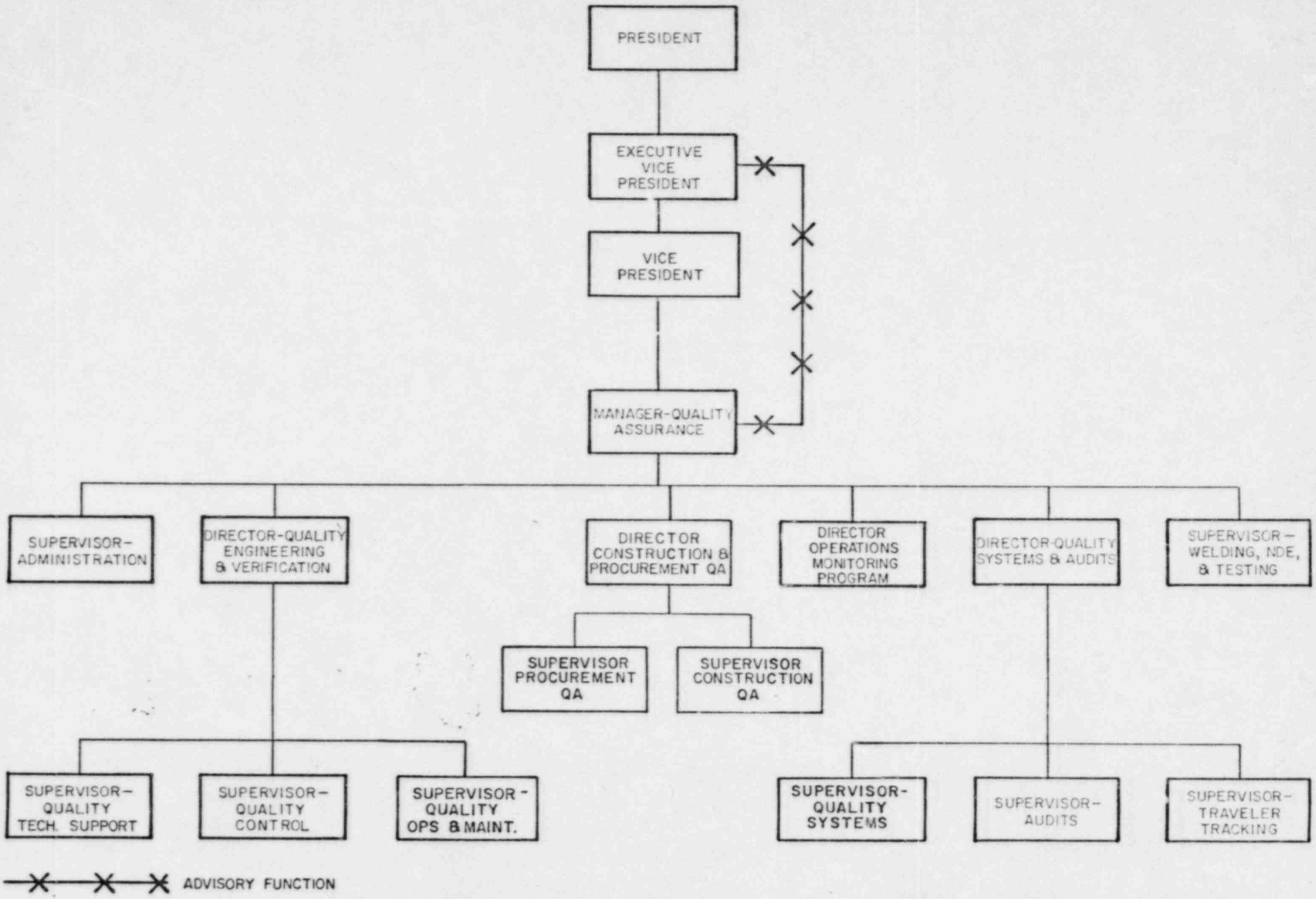

PRESIDENT
EXECUTIVE VICE PRESIDENT
VICE PRESIDENT
MANAGER-QUALITY ASSURANCE
SUPERVISOR-ADMINISTRATION
DIRECTOR-QUALITY ENGINEERING & VERIFICATION
DIRECTOR CONSTRUCTION & PROCUREMENT QA
DIRECTOR OPERATIONS MONITORING PROGRAM
DIRECTOR-QUALITY SYSTEMS & AUDITS
SUPERVISOR-WELDING, NDE, & TESTING
SUPERVISOR PROCUREMENT QA
SUPERVISOR CONSTRUCTION QA
SUPERVISOR-QUALITY TECH. SUPPORT
SUPERVISOR-QUALITY CONTROL
SUPERVISOR-QUALITY OPS & MAINT.
SUPERVISOR-QUALITY SYSTEMS
SUPERVISOR-AUDITS
SUPERVISOR-TRAVELER TRACKING
ADVISORY FUNCTION

FIGURE I-3

Approved Wilfred Cornell
Manager-QA

11 Oct 1985
Date

I. PURPOSE:

To describe the scope, function, and features of the Quality Assurance Programs of IP and its contractors governing design, procurement, fabrication, construction, inspection, and construction testing, of the Clinton Power Station.

II. REQUIREMENTS:

A. Interface

The IP Nuclear Power Quality Assurance Program is composed of the internal Construction Quality Assurance Program of IP supplemented by the programs of its major contractors (Sargent & Lundy, General Electric, and Baldwin Associates). IP has the overall responsibility for nuclear quality assurance applied to Clinton Station. IP has delegated to each of its contractors the responsibility for developing individual quality assurance programs covering their respective scopes of effort. These programs are approved by the Illinois Power Quality Assurance department for use at the Clinton Project.

The role of IP Quality Assurance is to direct the diverse efforts of IP and its contractors so that total program implementation is effectively achieved. The IP program has as its objective achieving a final plant which is demonstrably planned, designed, built, and tested in accordance with applicable governmental regulations and appropriate codes, standards, and guides.

B. General

The Quality Assurance Programs of IP and its contractors have the essential elements as shown by Table 2-1 and meet the following requirements:

1. The Quality Assurance Program is clearly described and documented.

2. There is an overall description of the Quality Assurance Program that describes the relationship

INFORMATION ONLY

of such documents as directives, policies, and procedures within the program.

3. The scope of the program is delineated.

4. The organizations involved are identified and the scope of their functions and interfaces defined.

5. Activities affecting quality and the conditions under which these activities function are controlled.

6. Special skills, processes, and equipment are applied as required.

7. Indoctrination and training are provided to assure that suitable proficiency is achieved and maintained.

8. The program is in compliance with the code of Federal Regulations (10CFR50, Appendix B) and other applicable codes, standards and regulations.

9. There is management cognizance of the program.

C. Codes and Standards

The Illinois Power Company and its contractors maintain Nuclear Quality Assurance Programs which conform to the ANSI Standards and NRC Regulatory Guides listed in Table 2-2.

II. DIVISION OF RESPONSIBILITY:

IP provides overall management of quality assurance activities at the Clinton Power Station. This manual is the principal document of the IP Quality Assurance Program and sets forth the QA requirements to which IP and its contractors shall conform.

A. IP is responsible for:

1. The IP Nuclear Power Quality Assurance Program for the design, procurement, construction, and related testing of the Clinton Power Station is based on a management endorsed, formally documented and implemented program which includes the following elements:

a. Organization

The Company has established an organization responsible to top management for the design, procurement and construction of CPS in accordance with applicable regulations, codes, and standards.

b. Program

A Quality Assurance Program description is documented in this IP Nuclear Power Construction Quality Assurance Manual which describes the objectives, requirements, interfaces, and division of responsibility for implementing the program.

c. Procedures

Written procedures are approved by management for use in conducting activities within the scope of the QA program.

d. In-line Reviews

In-line reviews of procedures, instructions, nonconformance reports, and overinspection of contractor activities are performed to provide additional assurance that QA program requirements are prescribed and achieved.

e. Surveillances and Audits

Independent, systematic, documented surveillances and audits are used to evaluate achievement of the objectives and the degree of compliance with program requirements.

2. The IP Nuclear Power Construction Quality Assurance Program is established and supported by three tiers of documents. Each successive tier transmits requirements from a higher level of authority to the next successive lower document level.

a. Nuclear Policy Statements are documents issued by Corporate Management to promulgate authoritative management directives establishing and defining quality assurance policies within the Illinois Power Company Nuclear Power Program.

b.1 The IP Nuclear Power Construction Quality Assurance Manual describes the objectives, requirements, interface relationships, and assignment of responsibilities for accomplishing activities which affect the safety-related functions of systems, structures, or components. It contains the minimum requirements to be applied by IP and contractors. The manual is developed, approved, and maintained current by the Manager Quality Assurance. The company management's endorsement of the IP Nuclear Power Construction Quality Assurance Program is signified in the "Policy Statement" portion of the manual.

b.2 Corporate Nuclear Procedures (CNP) are documents developed, approved, and issued to provide corporate direction and policy pertaining to appropriate nuclear program activities. CNPs are reviewed by the Manager-Quality Assurance for compliance with regulatory quality assurance requirements and are approved by corporate level management.

b.3 The IP Nuclear Power ASME Quality Assurance Manual describes the objectives, requirements, interface relationships, and assignment of responsibilities for accomplishing activities which affect pressure vessels, piping systems, and associated equipment. It contains the minimum requirements to be applied by IP and contractors. The manual is developed and maintained current by the Director-Construction & Procurement QA. Authorization for use is signified by the signature of the Vice President (Nuclear). The company management's endorsement of the IP Nuclear Power ASME Quality Assurance Program is signified in the "Policy Statement" portion of the manual.

b.4 CPS Records Management Standards provide direction in the areas of records identification, preparation, collection/review, turnover/transfer, storage, preservation, and maintenance.

c. Departmental Procedures or Instructions are developed, approved, and issued within each organization to further implement the

requirements of Corporate Nuclear Procedures and the IP Nuclear Power Construction Quality Assurance Manual. These departmental procedures or instructions provide more detailed direction to IP personnel engaged in nuclear power related activities.

3. The IP Nuclear Power Quality Assurance Program applies to those structures, systems, and components shown in Appendix A of this manual. The IP Nuclear Power Construction Quality Assurance Manual requirements described herein apply to Clinton Power Station activities prior to turnover of systems, structures, and components from the constructor to IP. These activities include design, certain procurement activities, fabrication, construction, inspection, and related construction testing. After turnover, the IP Nuclear Power Quality Assurance Program requirements described in the IP Nuclear Power Operational Quality Assurance Manual apply.

4. Changes to this Quality Assurance Manual are controlled by the provisions contained in Appendix B of this manual. The Manager-Quality Assurance reviews and authorizes any changes to the list of recipients for the IP Nuclear Power Construction Quality Assurance Manual.

5. The Manager-Quality Assurance periodically reports the status and effectiveness of the quality assurance effort to the Executive Vice Presidents, Vice Presidents, and Managers/Directors.

6. Department Managers/Directors are responsible for establishing and maintaining formal training programs necessary to ensure proper qualification of personnel performing activities related to the quality of Clinton Power Station. Such training programs include indoctrination, lectures, formal schooling, job experience, and individual study, as appropriate.

7. Contractors' quality assurance programs are reviewed and approved for compliance with applicable rules and regulations. Approval for use at the CPS site is documented in the IP Quality Assurance records and approval notifications are sent to the contractors for their quality assurance files.

B. Sargent & Lundy:

1. Sargent & Lundy maintains a suitable quality assurance program which controls the design of the Balance of Plant, the review of the NSSS design, and auditing of its contractors and vendors.

2. The Sargent & Lundy quality assurance program is described in the Sargent & Lundy Quality Assurance Manual. The manual is supplemented by detailed procedures to implement the requirements of the program and by written project instructions as determined by the Project Manager to be necessary for Sargent & Lundy's work applicable to Clinton.

C. General Electric:

1. General Electric maintains a suitable quality assurance program for design, fabrication, fabrication testing, and delivery of NSSS equipment and nuclear fuel.

2. The General Electric program is described in the NED BWR Quality Assurance Program Description. The program includes manuals and procedures necessary to provide quality surveillance and control for the GE scope of work. The General Electric Quality Assurance organization is responsible for implementation of the GE program. The General Electric Policy Documents, Program Description, procedures, manuals, and implementing documents are applied to successively lower levels of GE work.

D. Baldwin Associates:

1. Baldwin Associates maintains a suitable quality assurance program controlling its scope of construction and related activities for CPS.

2. The Baldwin Associates quality assurance program is described in the Baldwin Associates Quality Assurance Manual. The manual is supplemented by detailed procedures and written instructions as needed for detailed work. It provides for systematic construction control which extends to special processes, materials control, procurement, field design control, inspection, construction, testing, records, and control of purchased components.

TABLE 2-1

QUALITY ASSURANCE PROGRAM REQUIREMENTS

	Program Requirements	IP	Sargent & Lundy	General Electric	Baldwin Associates
1.)	Quality Assurance Organization	x	x	x	x
2.)	Documented Quality Assurance Program and Procedures	x	x	x	x
3.)	Design Control	x	x	x	x
4.)	Control of Procurement Documents	x	x	x	x
5.)	Instructions, Procedures, and Drawings	x	x	x	x
6.)	Document Control	x	x	x	x
7.)	Control of Purchased Items				
	a.) Source Evaluation	x	x	x	x
	b.) Source Selection	x	x	x	x
	c.) Source Inspection and Audit	x	x	x	x
	d.) Receiving Inspection	x		x	x
8.)	Identification and Control of Materials, Parts, and Components	x		x	x
9.)	Control of Special Processes	x		x	x
10.)	Inspection Program	x		x	x
11.)	Test Control	x		x	x
12.)	Control and Calibration of Measuring and Test Equipment	x		x	x
13.)	Handling, Storage, Shipping and Preservation	x		x	x
14.)	Inspection, Test, and Operating Status	x		x	x
15.)	Control of Nonconforming Materials, Parts, and Components	x	x	x	x
16.)	Corrective Action	x	x	x	x
17.)	Quality Records	x	x	x	x
18.)	Audits	x	x	x	x

TABLE 2-2

CODES AND STANDARDS

ANSI STANDARD	REG GUIDE
ANSI N45.2 - 1977 QUALITY ASSURANCE PROGRAM REQUIREMENTS FACILITIES	RG 1.28 R/2(FEB 1979) QUALITY ASSURANCE PROGRAM REQ. (DESIGN & CONST) *
NOTE: The project QA programs, as committed in the PSAR were in compliance with ANSI N45.2(1971) as endorsed by Regulatory Guide 1.28 Rev. 0 dated June 7, 1972. Later revisions of ANSI N45.2 and the associated Regulatory Guide were incorporated in project QA programs.	
ANSI N45.2.1 - 1973 QA REQUIREMENTS FOR CLEANING OF FLUID SYSTEMS AND ASSOCIATED COMPONENTS OF WATER-COOLED NUCLEAR POWER PLANTS.	REG GUIDE 1.37 R/0 MARCH 1973 QUALITY ASSURANCE REQUIREMENTS FOR CLEANING OF FLUID SYSTEMS AND ASSOCIATED COMPONENTS OF WATERCOOLED NUCLEAR POWER PLANTS.
ANSI N45.2.2 - 1972 PACKAGING, SHIPPING, RECEIVING, STORAGE AND HANDLING OF ITEMS FOR NUCLEAR POWER PLANTS DURING THE CONSTRUCTION PHASE PLANTS	REG GUIDE 1.38 R/2 MAY 1977 QUALITY ASSURANCE REQUIREMENTS FOR PACKAGING, SHIPPING, RECEIVING, STORAGE, AND HANDLING OF ITEMS FOR WATER-COOLED NUCLEAR POWER *
ANSI N45.2.3 - 1973 HOUSEKEEPING DURING THE CONSTRUCTION PHASE OF NUCLEAR POWER PLANTS	REG GUIDE 1.39 R/2 SEPT 1977 HOUSEKEEPING REQUIREMENTS FOR WATER-COOLED NUCLEAR POWER PLANTS *

*Denotes exceptions documented in Section 1.8 of the FSAR.

TABLE 2-2 (Continued)

ANSI STANDARD	REG GUIDE
ANSI N45.2.4 - 1972 INSTALLATION, INSPECTION, AND TESTING REQUIREMENTS FOR INSTRUMENTATION AND ELECTRICAL EQUIPMENT DURING THE CONSTRUCTION OF NUCLEAR POWER GENERATING STATIONS.	REG GUIDE 1.30 R/0 AUGUST 1972 QUALITY ASSURANCE REQUIREMENTS FOR THE INSTALLATION, INSPECTION AND TESTING OF INSTRUMENTATION AND ELECTRICAL EQUIPMENT *
ANSI N45.2.5 - 1974 SUPPLEMENTARY QA REQUIREMENTS FOR INSTALLATION INSPECTION AND TESTING OF STRUCTURAL STEEL DURING THE CONST. PHASE OF NUCLEAR POWER PLANTS.	REG GUIDE 1.94 R/1 APRIL 1976 QUALITY ASSURANCE REQUIREMENTS FOR INSTALLATION INSPECTION AND TESTING OF STRUCTURAL CONCRETE AND STRUCTURAL STEEL DURING THE CONSTRUCTION PHASE OF NUCLEAR POWER PLANTS *
ANSI N45.2.6 - 1978 QUALIFICATIONS OF INSPECTION EXAMINATION AND TESTING PERSONNEL FOR NUCLEAR POWER PLANTS	REG GUIDE 1.58 R/1 SEPT 1980 QUALIFICATION OF NUCLEAR POWER PLANT INSPECTION, EXAMINATION AND TESTING PERSONNEL *
ANSI N45.2.8 - 1975 SUPPLEMENTARY QUALITY ASSURANCE REQUIREMENTS FOR INSTALLATION, INSPECTION AND TESTING OF MECHANICAL EQUIPMENT AND SYSTEMS FOR THE CONSTRUCTION PHASE OF NUCLEAR POWER PLANTS.	REG GUIDE 1.116 R/0-R JUNE 1976 QUALITY ASSURANCE REQUIREMENTS FOR INSTALLATION INSPECTION, AND TESTING OF MECHANICAL EQUIPMENT AND SYSTEMS

*Denotes exceptions documented in section 1.8 of FSAR.

TABLE 2-2 (Continued)

ANSI STANDARD	REG GUIDE
ANSI N45.2.9 - 1974 REQUIREMENTS FOR COLLECTION, STORAGE AND MAINTENANCE OF QA RECORDS FOR NUCLEAR POWER PLANTS	REG GUIDE 1.88 R/2 OCT 1976 COLLECTION, STORAGE AND MAINTENANCE OF NUCLEAR POWER PLANT QUALITY ASSURANCE RECORDS *
ANSI N45.2.10 - 1973 QA TERMS AND DEFINITIONS	REG GUIDE 1.74 R/0 FEB 1974 QUALITY ASSURANCE TERMS AND DEFINITIONS
ANSI N45.2.11 - 1974 QA REQUIREMENTS FOR THE DESIGN OF NUCLEAR POWER PLANTS	REG GUIDE 1.64 R/2 JUNE 1976 QUALITY ASSURANCE REQUIREMENTS FOR THE DESIGN OF NUCLEAR POWER PLANTS
ANSI N45.2.12 - 1977 REQUIREMENTS FOR AUDITING QA PROGRAMS FOR NUCLEAR POWER PLANTS	REG GUIDE 1.144 R/1 SEPT 1980 AUDITING OF QUALITY ASSURANCE PROGRAMS FOR NUCLEAR POWER PLANTS
ANSI N45.2.13 1976 QA REQUIREMENTS FOR CONTROL OF PROCUREMENT OF ITEMS AND SERVICES FOR NUCLEAR POWER PLANTS	REG GUIDE 1.123 R/1 JULY 1977 QUALITY ASSURANCE REQUIREMENTS FOR CONTROL OF PROCUREMENT OF ITEMS AND SERVICES FOR NUCLEAR POWER PLANTS *
ANSI N45.2.23 1978 QUALIFICATIONS OF QA PROOGRAM AUDIT PERSONNEL FOR NUCLEAR POWER PLANTS	REG GUIDE 1.146 R/0 AUGUST 1980 QUALIFICATION OF QA PROGRAM AUDIT PERSONNEL FOR NUCLEAR POWER PLANTS *

*Denotes exceptions documented in Section 1.8 of FSAR.

TABLE 2-2 (Continued)

ANSI STANDARD	REG GUIDE
ANSI N101.4 - 1972 QUALITY ASSURANCE FOR PROTECTIVE COATING APPLIED TO NUCLEAR FACILITIES	REG GUIDE 1.54 R/0 JUNE 1973 QUALITY ASSURANCE REQUIREMENTS FOR PROTECTIVE COATINGS APPLIED TO WATER-COOLED NUCLEAR POWER PLANTS

Approved Wilfred Connell
Manager-QA

11 Oct 1985
Date

I. PURPOSE:

To state the requirements for controlling design activities to assure design bases and regulatory requirements are correctly translated into design documents such as specifications, drawings, procedures, and instructions.

II. REQUIREMENTS:

A. Interface

IP Nuclear Station Engineering Department (NSED) is responsible for the design of the Clinton Power Station. The performance of design is assigned to contractors. General Electric will design the NSSS and nuclear fuel. Sargent & Lundy performs the design of the Balance of Plant and serves as the overall design coordinator. In this capacity, Sargent & Lundy receives and reviews applicable design documents from the other contractors, advises IP of design interface problems, and maintains configuration control. Baldwin Associates ensures that requests for design changes are forwarded to the appropriate design agent through IP.

B. General

The design control systems of IP and its contractors will, as a minimum, have the scope and essential elements shown in Table 3-1 and shall meet the following requirements:

1. Appropriate design planning documents shall be developed to identify the specific design documents, schedule their completion, and define major design milestones and other control points.

2. Design bases, regulatory requirements, safety requirements, performance objectives, design margins, special processes, material and testing requirements, including acceptance criteria, quality assurance requirements, and operating objectives shall be adequately translated into various design documents. Design verification by testing when specified shall be identified in the design and purchase documents.

INFORMATION ONLY

3. Design documents shall describe quality related materials, components, systems, and structures in accordance with the design bases incorporated in the Safety Analysis Report (SAR). Design documents shall be based on applicable regulatory criteria and include identification or specific engineering codes and standards to be employed. Design deviations from required quality codes, standards, and regulations shall be documented, approved by appropriate authorities, and otherwise controlled.

4. Interfaces within and between each design organization shall be controlled with adequate procedures to assure that there is no conflict in design objectives. The responsibility for the interface control shall be assigned.

5. A design review and verification system shall be established to assure adequacy and conformance of materials, parts, equipment, and processes with design bases, regulatory requirements, and applicable codes and standards. The responsible design organization shall specify the verification methods to be employed.

    a. When design is verified by review, the bases shall be documented and the work shall be conducted by personnel who did not perform the original design, but have technical qualifications equivalent to the minimum requirements for those performing the original design work.

    b. When design is verified by testing, the testing shall be specified to demonstrate adequacy of performance under the most adverse design conditions. Appropriate operating modes and environmental conditions in which the item must perform satisfactorily shall be considered in determining such conditions.

6. A design control system and procedures shall be established. They shall assure that participating design organizations review, approve, release, and distribute documents in a controlled manner. Changes to design documents shall be subjected to requirements equivalent to those for the basic document.

    a. The design change record, or an accompanying document, shall identify the other design documents which are affected by the change.

Such documents shall be suitably controlled or revised.

b. For significant design changes, the design change record, or an accompanying document, will detail the reason and justification for the change.

7. A program shall be established which describes the design control and verification elements that ensure that the as-built configuration of the safety-related structures, systems, and components of the plant conforms to the final design and meets regulatory requirements.

III. DIVISION OF RESPONSIBILITY:

IP maintains overall responsibility for the design of the Clinton Power Station. In order to effectively fulfill this responsibility, IP has assigned organizational responsibilities which are summarized in Table 3-1. The assignment of these responsibilities are as follows:

A. IP is responsible for:

1. Control of design contractors. This responsibility is assigned to the Manager-Nuclear Station Engineering.

2. Translating requirements into design documents. The responsibility for design document accuracy is assigned to the Manager-Nuclear Station Engineering.

3. The review and processing of design change requests. The Director-Construction & Startup Engineering has been assigned this responsibility.

4. Auditing contractors to determine whether their design control systems meet the specified requirements of this manual and are properly implemented.

5. Assuring that design documents reflect the actual as-built configuration of CPS.

B. Sargent & Lundy is responsible for:

1. Employing design control measures to assure design intent is achieved in Balance of Plant design documents.

2. Producing and certifying appropriate Design Specifications.

3. Preparing ASME Code related certifications (on behalf of IP) of Design Specifications, Stress Reports, and other key documents for CPS.

4. Developing an integrated equipment, system, and component identification system for the entire station.

5. Specifying the special processes and the applicable codes and standards for items of its design scope.

6. Specifying the inspection and related acceptance criteria applicable to Balance of Plant items.

7. Specifying the required tests and related acceptance criteria for Balance of Plant equipment and systems.

8. Evaluating design verification test results and verifying for IP's permanent records that Balance of Plant equipment meets the designer's specified requirements.

9. Developing or specifying that suppliers provide the general requirements for special handling, storage, and shipping of Balance of Plant equipment.

C. General Electric is responsible for:

1. Employing design control measures assuring that design intent is achieved in NSSS and nuclear fuel design documents.

2. Producing code required Design Specifications and Stress Reports for NSSS equipment and nuclear fuel.

D. Baldwin Associates is responsible for:

1. Employing field design control measures assuring conformance with the design intent as specified in design documents. BA shall refer design problems or change requests to IP for processing and resolution.

GENERAL DESIGN CONTROL SYSTEM ELEMENTS

TABLE 3-1

	Element	IP	Sargent & Lundy	General Electric	Baldwin Assoc.
1.)	Design Planning		x	x	
2.)	Prepare Design Documents		x	x	
3.)	Identify and Resolve Internal Design Interfaces		x	x	
4.)	Identify and Resolve External Interfaces	x	x	x	
5.)	Perform Design Verification	x	x	x	
6.)	Review Design Documents for incorporation of Regulatory Requirements, Codes and Standards, Quality Requirements, Performance, Material Application, Test Requirements, Acceptance Criteria, Inservice Inspection, Maintenance, Special Processes	x	x	x	
7.)	Control Design Changes	x	x	x	x
8.)	Provide Design Specs and Stress Reports		x	x	
9.)	Review subcontractor and Vendor Design Documents	x	x	x	
10.)	Audit Design Control System	x	x	x	x

Approved Wilfred Carroll
Manager-QA

11 Oct 1985
Date

I. PURPOSE:

To describe the requirements for review and control of procurement specifications, purchase orders, and associated documents so procurement of material, equipment, and services, whether by IP, contractors, vendors, or subcontractors, is properly specified and controlled.

II. REQUIREMENTS:

A. Interface

The main interface which exists for procurement document control is between IP, BA, and S&L. Under various conditions S&L, BA, and IP generate procurement documents and are responsible for conducting appropriate reviews to ensure that applicable technical and quality assurance program requirements, etc. have been included. Sargent & Lundy is responsible for the preparation and review of technical documents (drawings, specifications, etc.). NSED is responsible for preparation of technical documents (drawings, specifications, etc.). IP and BA normally are responsible for the review of bid packages, the S&L prepared contractual documents, and the placement of the purchase orders. Coordination of changes to procurement documents after issuance of a purchase order or contract are by that organization issuing the purchase order or contract. A secondary interface exists between GE and S&L. GE furnishes S&L with information copies of all procurement documents released to GE subcontractors. GE also furnishes certain documents from its vendors and suppliers as they relate to overall design coordination information.

B. General

IP and its contractors shall meet the following requirements:

1. Procurement documents shall specify the appropriate quality requirements.

INFORMATION ONLY

2. Procurement documents shall, when appropriate, require that the vendors and subcontractors have quality assurance programs in compliance with applicable codes, standards, rules and regulations. Vendors and subcontractors will be required to extend the applicable quality assurance requirements to their lower tier suppliers.

3. Procurement shall be based on appropriate and current specifications, drawings, and related documents.

4. Procurement documents shall be reviewed to ensure that the correct specifications, drawings, quality requirements, and related documents are included or referenced.

5. Procurement shall be in conformance with approved written procedures.

6. Changes to procurement documents shall be subject to the same degree of control as the original procurement documents.

7. Requirement for establishing hold points and the release control shall be clearly identified in the procurement documents.

III. DIVISION OF RESPONSIBILITY:

IP has assigned procurement responsibilities as follows:

A. IP is responsible for:

1. Procurement of selected materials, equipment, and services for construction and installation at CPS.

2. Technical interpretation of design requirements for CPS establishing the safety classification and the technical requirements for special procurements. These responsibilities are assigned to the Manager-Nuclear Station Engineering.

3. Technical evaluation and technical approval of sources for special items and design services for CPS. These responsibilities are assigned to the Manager-Nuclear Station Engineering.

4. Review of selected procurement documents generated by S&L to assure that regulatory, technical, and quality assurance requirements are included.

These responsibilities are assigned to the Manager-Nuclear Station Engineering.

5. Commercial aspects of procurement, including the control and placement of purchase orders and contracts for construction and installation related IP procurements. These responsibilities are assigned to the Manager-Nuclear Planning and Support.

6. Placing IP purchase orders and/or contracts with approved vendors and contractors. This responsibility is assigned to the Manager-Nuclear Planning and Support.

7. Preparing the quality assurance program requirements of procurement documents for special items and services. IP Quality Assurance is also responsible for evaluation and approval of the quality assurance programs of prospective vendors and suppliers of special items and services.

8. Periodic audit and/or survey of internal, vendor, and contractor purchasing procedures and practices to verify that the requirements of this manual are being met and are effectively providing procured items based on the correct purchasing documents.

B. Sargent & Lundy is responsible for:

Preparation of procurement specifications and contracts for Balance of Plant materials, equipment, and services for construction and installation.

C. General Electric is responsible for:

Preparation and processing of procurement documents for NSSS equipment for construction and installation. General Electric is similarly responsible for procurement of selected material for the nuclear fuel.

D. Baldwin Associates is responsible for:

Procurement of selected BOP safety-related materials, equipment, and services for construction and installation at CPS.

Approved Wilfred Connell
Manager-QA

11 Oct 1985
Date

I. PURPOSE:

To specify the requirements for use of instructions, procedures, sketches, drawings, and related material to control activities which affect quality.

II. REQUIREMENTS:

A. Interface

Instructions, procedures, and drawings for execution of work are generated and implemented where required within the using organization. Procurement specifications require that vendors and contractors who are not assigned primary design responsibilities submit drawings and procedures covering technical/quality portions of their work to S&L, GE, or BA as appropriate. Cleaning, handling, testing, and installation procedures are originated by design organizations and/or manufacturers and transmitted to BA for implementation in the field.

INFORMATION ONLY

B. General

IP and its contractors shall meet the following requirements:

1. Written procedures, instructions, and drawings shall be developed and used for activities affecting quality.

2. Instructions, procedures, and drawings shall include the applicable qualitative and quantitative acceptance criteria for determining that important activities have been satisfactorily accomplished.

3. Where appropriate, instructions, procedures, and drawings for fabrication, installation, and testing shall indicate the sequential order of activities.

4. Separate records forming a part of instructions, procedures, and drawings shall have sufficient identification to relate the records to that specific instruction, procedure, or drawing.

III. DIVISION OF RESPONSIBILITY:

IP has assigned the responsibility for using instructions, procedures, and drawings as follows:

A. IP is responsible for:

1. Developing, approving, issuing, and employing those procedures, instructions, or drawings necessary to accomplish assigned tasks and responsibilities.

2. Determining the need for, developing, approving, issuing, employing and revising instructions related to each Supervisor/Manager's scope of effort.

3. Assuring that IP contracts or procurement documents assign responsibility for providing and using appropriate instructions, procedures, and drawings for control of activities performed which may affect quality.

4. Inline review and approval of selected Illinois Power, contractor, and vendor procedures and instructions prior to implementation to ensure compliance to codes, standards, regulations, the SAR, and the requirements of this manual.

5. Periodically audit internal, contractor, and vendor activities to determine appropriate instructions, procedures, and drawings exist and are being properly implemented in accordance with the requirements of this manual.

B. Sargent & Lundy is responsible for:

1. Employing instructions, procedures, and drawings for its scope of effort.

2. Review drawings and procedures submitted by vendors and contractors prior to use at CPS.

C. General Electric is responsible for:

1. Employing instructions, procedures, and drawings for its scope of effort.

2. Requiring subcontractors to employ instructions, procedures, and drawings for control of activities which may affect quality.

D. Baldwin Associates is responsible for:

1. Employing instructions, procedures, and drawings for its scope of effort.

2. Requiring its subcontractors to employ instructions, procedures, and drawings for control of activities which may affect quality.

Approved Wilfred Conell
Manager-QA

11 Oct 1985
Date

I. PURPOSE:

To specify the requirements for approval, release, and changes of documents prescribing activities which may affect quality.

II. REQUIREMENTS:

A. Interface

The principal document control interface is that of the transfer of design documents among the contractors and IP. Specified design documents and technical procedures prepared and issued by other contractors, as well as those documents prepared and issued by S&L, are reviewed by S&L for approval status. IP and each contractor have measures established to assure the receipt and use of approved, current documents.

INFORMATION ONLY

B. General

IP and its contractors shall meet the following requirements:

1. Documents shall be reviewed for adequacy by appropriately qualified personnel, approved for issue and use by authorized personnel, and distributed to/used at the location where the prescribed activity is performed.

2. Changes to documents shall be subjected to the same degree of control as applied to the original documents.

3. Organizations issuing documents related to design, fabrication, construction, inspection, and testing have and use a control system which clearly identifies the document status such as "preliminary", "issued for information", "approved for procurement", "approved for construction", "trial use", etc.

4. Document logs, index sheets, or other accountability methods shall be prepared and maintained current.

5. Measures shall be established to assure current revisions of documents are distributed to the points of use and are used.

III. DIVISION OF RESPONSIBILITY:

IP has assigned document control responsibilities as follows:

A. IP is responsible for:

1. Employing measures to receive, record, and internally distribute documents from contractors or other IP departments.

2. Generating and implementing written procedures for the control of documents produced by it.

3. Assuring that IP contracts or procurement documents require the contractors or vendors employ appropriate control of documents for those activities which may affect quality.

4. Periodically auditing internal, contractor, and vendor activities to assure that appropriate document control measures are employed in accordance with this manual.

B. Sargent & Lundy is responsible for:

1. Employing document control measures for those documents related to its scope of effort.

2. Instituting a system for receipt and review of those documents required by contract or specification.

C. General Electric is responsible for:

1. Employing document control measures for those documents related to its scope of effort.

2. Requiring that its subcontractors employ appropriate document control measures for the activities of those subcontractors which may affect quality.

D. Baldwin Associates is responsible for:

1. Employing document control measures for those documents related to its scope of effort.

2. Requiring that its subcontractors employ appropriate document control measures for the activities which may affect quality.

Approved Wilfred Caudill 11 Oct 1985
Manager-QA Date

I. PURPOSE:

To establish the requirements for a system to assure that purchased material, equipment, and services conform to procurement requirements.

II. REQUIREMENTS:

A. Interface

Control of purchased material, equipment, and services is accomplished by evaluation and selection of procurement source and inspection of product or service at either the vendor/contractor's plant and/or upon receipt at the site. S&L interfaces with IP by performing bid evaluations and reviewing vendor/contractor prepared documents. BA performs source evaluations within its scope such as QA program reviews and evaluations, procurement quality surveillance, source inspection, and/or receipt inspection for BA purchased (BA issued purchase order or contract) material, equipment, or service. IP/QA performs receipt inspection of IP purchased (IP issued purchase order or contract) construction and installation related material, equipment and services.

B. General

IP and its contractors shall meet the following requirements:

1. Procedures or instructions shall be utilized to effect control of purchased material, equipment, services, etc.

2. Source evaluation shall establish that contractors, vendors, and subcontractors have demonstrable capability to provide a product, process, or service in accordance with the procurement documents.

INFORMATION ONLY

3. Where valid knowledge or records of contractors', vendors', and subcontractors' capability and performance are not available, a survey of the facilities, organization, process and inspection capabilities, and personnel skills will be made. The results of such surveys shall be recorded and maintained.

4. Effectiveness of the control of quality by contractors, vendors, and subcontractors shall be assessed at intervals consistent with the importance, complexity, method of purchase, and quality requirements of the product or service.

5. Receiving and/or source inspections shall be performed as necessary to ensure that purchased material, equipment, and services conform to the requirements of the procurement documents.

6. Contractors, subcontractors, and vendors shall be required to provide documentary evidence of product conformance to procurement requirements. This documentary evidence shall be present at the site prior to installation or use of the equipment or material.

III. DIVISION OF RESPONSIBILITY:

IP has assigned responsibilities for the control of purchased material, equipment, and services as follows:

A. IP is responsible for:

1. Performance of technical reviews and evaluations of vendors' and contractors' capabilities prior to release for issuance of purchase order or contract for construction and installation related procurement. This responsibility is assigned to the Manager-Nuclear Station Engineering.

2. Providing or assuring that pre-award and periodic evaluations of vendors' and contractors' quality assurance programs are accomplished for IP procurement of materials, equipment, and services.

3. Performance of commercial evaluations of vendor's contractors and ensure that purchase orders or contracts are awarded only to approved vendors or subcontractors. This responsibility is assigned to the Manager-Nuclear Planning and Support.

4. Determining and designating receiving and/or source inspection requirements for IP procurement

of material and services.

5. Periodic auditing and surveilling internal, contractor, and vendor activities to assure that control of purchased material, equipment, and services is in conformance with the requirements of this manual.

B. Sargent & Lundy is responsible for:

Providing assistance to IP as required in control of purchased Balance of Plant material, equipment, and services. This includes evaluations of vendor's technical and quality assurance capabilities for furnishing the specified product(s).

C. General Electric is responsible for:

1. Control of purchased material, equipment, and services required for its scope of work.

2. Requiring that its subcontractors employ appropriate controls on purchased materials, equipment, and services required for their respective scopes of work.

D. Baldwin Associates is responsible for:

1. Control of purchased material, equipment, and services required for its scope of work.

2. Subcontractors employing appropriate controls for purchased materials, equipment, and services required for those subcontractors' scope of effort, and performance of source surveillances where required.

3. Performance of pre-award and periodic evaluations (including QA program evaluations) of vendors and/or contractors for BA procured construction and installation materials, equipment, and services.

4. Performance of receipt inspection for construction and installation materials, equipment, and services received at the CPS site not procured by IP.

5. Documentary evidence of item conformance to procurement requirements is available at the site prior to release for installation or use.

Approved Wilfred Cavell
Manager-QA

11 Oct 1985
Date

I. PURPOSE:

To establish the requirements for a system to assure that purchased material, equipment, and services conform to procurement requirements.

II. REQUIREMENTS:

A. Interface

Control of purchased material, equipment, and services is accomplished by evaluation and selection of procurement source and inspection of product or service at either the vendor/contractor's plant and/or upon receipt at the site. S&L interfaces with IP by performing bid evaluations and reviewing vendor/contractor prepared documents. BA performs source evaluations within its scope such as QA program reviews and evaluations, procurement quality surveillance, source inspection, and/or receipt inspection for BA purchased (BA issued purchase order or contract) material, equipment, or service. IP/QA performs receipt inspection of IP purchased (IP issued purchase order or contract) construction and installation related material, equipment and services.

B. General

IP and its contractors shall meet the following requirements:

1. Procedures or instructions shall be utilized to effect control of purchased material, equipment, services, etc.

2. Source evaluation shall establish that contractors, vendors, and subcontractors have demonstrable capability to provide a product, process, or service in accordance with the procurement documents.

INFORMATION ONLY

3. Where valid knowledge or records of contractors', vendors', and subcontractors' capability and performance are not available, a survey of the facilities, organization, process and inspection capabilities, and personnel skills will be made. The results of such surveys shall be recorded and maintained.

4. Effectiveness of the control of quality by contractors, vendors, and subcontractors shall be assessed at intervals consistent with the importance, complexity, method of purchase, and quality requirements of the product or service.

5. Receiving and/or source inspections shall be performed as necessary to ensure that purchased material, equipment, and services conform to the requirements of the procurement documents.

6. Contractors, subcontractors, and vendors shall be required to provide documentary evidence of product conformance to procurement requirements. This documentary evidence shall be present at the site prior to installation or use of the equipment or material.

III. DIVISION OF RESPONSIBILITY:

IP has assigned responsibilities for the control of purchased material, equipment, and services as follows:

A. IP is responsible for:

1. Performance of technical reviews and evaluations of vendors' and contractors' capabilities prior to release for issuance of purchase order or contract for construction and installation related procurement. This responsibility is assigned to the Manager-Nuclear Station Engineering.

2. Providing or assuring that pre-award and periodic evaluations of vendors' and contractors' quality assurance programs are accomplished for IP procurement of materials, equipment, and services.

3. Performance of commercial evaluations of vendor's contractors and ensure that purchase orders or contracts are awarded only to approved vendors or subcontractors. This responsibility is assigned to the Manager-Nuclear Planning and Support.

4. Determining and designating receiving and/or source inspection requirements for IP procurement

of material and services.

5. Periodic auditing and surveilling internal, contractor, and vendor activities to assure that control of purchased material, equipment, and services is in conformance with the requirements of this manual.

B. Sargent & Lundy is responsible for:

Providing assistance to IP as required in control of purchased Balance of Plant material, equipment, and services. This includes evaluations of vendor's technical and quality assurance capabilities for furnishing the specified product(s).

C. General Electric is responsible for:

1. Control of purchased material, equipment, and services required for its scope of work.

2. Requiring that its subcontractors employ appropriate controls on purchased materials, equipment, and services required for their respective scopes of work.

D. Baldwin Associates is responsible for:

1. Control of purchased material, equipment, and services required for its scope of work.

2. Subcontractors employing appropriate controls for purchased materials, equipment, and services required for those subcontractors' scope of effort, and performance of source surveillances where required.

3. Performance of pre-award and periodic evaluations (including QA program evaluations) of vendors and/or contractors for BA procured construction and installation materials, equipment, and services.

4. Performance of receipt inspection for construction and installation materials, equipment, and services received at the CPS site not procured by IP.

5. Documentary evidence of item conformance to procurement requirements is available at the site prior to release for installation or use.

Approved Wilfred Connell
Manager-QA

11 Oct 1985
Date

I. PURPOSE:

To establish the requirements for a system of identification and control of materials, parts, and components so that traceability from procurement through installation to end use is assured and the use of incorrect or defective items is avoided.

II. REQUIREMENTS:

A. Interface

The identification and control of materials, parts, and components is primarily the function of the using organizations, i.e., various fabricators, the Constructor, and IP. In addition, Sargent & Lundy interfaces with the various contractors and subcontractors in the assignment of identification information and the consolidation of random equipment identification systems into one intergrated identification system for the Clinton Station.

B. General

IP and its contractors shall meet the following requirements:

1. Procurement documents shall specify an appropriate identity to be applied to items of purchase.

2. An inventory control system shall be employed for receipt of materials, parts, and components.

3. The identity of materials, parts, or components shall be on the item or on records traceable to the item. When physical marking is employed, the technique shall be indelible and not detrimental to the intended function of the item.

4. Identification shall be transferred to each part or piece of an item when it is subdivided into parts or pieces.

INFORMATION ONLY

5. Traceability shall be provided when required by code or regulation.

III. DIVISION OF RESPONSIBILITY:

IP has assigned the responsibility for identification and control of material, parts, and components, as follows:

A. IP is responsible for:

1. Incorporation of appropriate quality assurance program requirements for identification and control of materials, parts, and components into IP generated contracts or procurement documents.

2. Periodic auditing of contractors and vendors to assure that identification and control of materials, parts, and components is in accordance with the requirements of this manual.

B. Sargent & Lundy is responsible for:

1. Incorporation of applicable requirements for identification and control of materials, parts, and components into technical and procurement documents generated. Sargent & Lundy shall also be responsible for specifying an equipment identification scheme.

C. General Electric is responsible for:

1. Identification of materials, parts, and components required for the NSSS equipment and nuclear fuel.

2. General Electric manufacturing organizations maintaining an identification and control system for materials, parts, and components.

3. General Electric's subcontractors employing appropriate identification and control measures for the subcontractors' scope of effort.

D. Baldwin Associates is responsible for:

1. Establishing and maintaining the identification and control of materials, parts, and components delivered to the field.

2. BA subcontractors employing appropriate identification and control measures as required for the subcontractors' scope of effort.

Approved Wilfred Connell
Manager-QA

11 Oct 1985
Date

I. PURPOSE:

To establish the requirements to assure that special processes are performed under adequate controls and that procedures governing these processes are established in accordance with applicable codes and specifications, applied by qualified operators, and properly documented. Special processes are those activities such as welding, heat treating, plating, non-destructive examinations, etc. in which the quality of the product is heavily dependent upon control of the process and the skills of the personnel who perform the process.

II. REQUIREMENTS:

A. Interface

Control of special processes is normally the function of the fabricators and the Constructor.

Interfaces exist between the designing organizations, the fabricators, and the Constructor. Interfaces are controlled by the designing organization specifying the applicable special processes in design documents and subsequently reviewing the special process procedures submitted.

B. General

IP and its contractors shall meet the following requirements:

1. The need for special processes, and the codes or standards applicable thereto, shall be generally identified during design.

2. Fabricators and constructors shall utilize appropriate methods for the qualification and certification of special processes.

3. Personnel responsible for the performance and verification of special processes will be qualified as required by, and in accordance with, applicable codes and standards.

INFORMATION ONLY

4. Special processes shall be accomplished under suitable, controlled conditions. This shall include the use of qualified equipment, adequate control of the environment, and establishment of the proper prerequisites related to the process.

5. Records of procedure, personnel, and equipment qualification shall be maintained using suitable methods for storage and retrievability.

6. Records that special processes were performed in compliance with qualified or approved procedures and with qualified personnel shall be maintained using suitable methods for storage and retrievability.

III. DIVISION OF RESPONSIBILITY

IP has assigned responsibility for the control of special processes as follows:

A IP is responsible for:

1. Assuring that IP contracts or procurement documents require contractor or vendors to exercise control of special processes, as required, for equipment and materials.

2. Measures to control special processes and ensure that personnel are qualified in accordance with applicable codes, standards, specifications, criteria, and any other special requirements.

3. Periodic auditing of internal, vendor, and contractor activities to assure control of special processes in accordance with this manual.

B. Sargent & Lundy is responsible for:

1. The review of the suitability and adequacy of submitted special process procedures.

2. Providing consultant service to assist IP in surveillance of special processes.

C. General Electric is responsible for:

1. Specifying the special processes and the applicable codes and standards for items of its design scope.

2. General Electric manufacturing organizations establishing systems to effect control of special processes for their scopes of supply.

3. GE subcontractors exercising appropriate control of special processes.

D. Baldwin Associates is responsible for:

1. Control of special processes performed in its construction activities.

2. BA subcontractors exercising appropriate control of special processes.

Approved Wilfred Cornell
Manager-QA

11 Oct 1985
Date

I. PURPOSE:

To establish the requirements for a program of inspection which provides assurance that the fabrication, construction, and installation activities conform to the requirements of the applicable instructions, procedures, and drawings.

II. REQUIREMENTS:

A. Interface

The major responsibility for inspection is the function of various fabricators and constructors. Acceptance criteria shall normally be specified or referenced in design and/or procurement documents; therefore, the fabricators and the constructor will interface with the organizations issuing such documents regarding inspections.

B. General

IP and its contractors shall meet the following requirements:

1. The general requirements for inspections shall be identified and documented during design of parts, components, and systems.

2. The organization responsible for fabrication, construction, or installation of parts, components, and systems shall prepare a detailed inspection program responsive to the requirements established in the design and procurement documents. Hold points, if required in purchase orders, shall be specified in the inspection program.

3. Persons implementing the inspection program, i.e., performing the actual inspection activity, shall be organizationally independent of the persons performing the activity being inspected.

4. Inspection instructions shall contain or reference, as a minimum:

INFORMATION ONLY

a. A description of the inspection point (source, receiving, etc.) and, where applicable, the sampling system to be used.

b. The discrete identity of the part, component, or system being inspected.

c. Applicable documents, drawings, and specifications pertaining to the activity or item under inspection.

d. The inspection method to be used for each operation.

e. The type, range, and accuracy of the inspection instrument(s).

f. Criteria for acceptance.

g. Qualification requirements of the inspector.

5. Inspectors shall be qualified in accordance with applicable codes or standards.

6. Where direct inspection or testing is impossible or disadvantageous, indirect control by monitoring process methods, equipment, and personnel shall be employed. When necessary to provide an adequate level of product quality assurance, both direct control (inspection and testing) and indirect control (process monitoring) shall be utilized. When sampling plans are used, their applicability shall be evaluated and justified in a documented manner.

7. Rework, repair, or replacement subsequent to inspections will require reinspection to the extent necessary to demonstrate acceptability and conformance with the rework/repair procedures.

8. In-process and/or final inspections shall verify that the specified requirements have been met.

III. DIVISION OF RESPONSIBILITY

IP has assigned responsibility for inspection as follows:

A. IP is responsible for:

1. Incorporating appropriate quality assurance program requirements for inspection into IP generated contracts or procurement documents.

2. Conducting "overinspection" of contractor and subcontractor activities. Overinspection shall be conducted on a sampling basis by qualified inspectors under the employment of IP who are independent from the construction and inspection activities being reviewed.

3. Conducting periodic reviews and audits of contractor and vendor inspection programs and their implementation to ensure compliance with the requirements of this manual.

B. Sargent & Lundy is responsible for:

1. Specifying inspection and related acceptance criteria in specifications and drawings it issues.

2. Providing consulting services to assist IP in surveillance of inspection activities or to perform special inspections.

C. General Electric is responsible for:

1. Specifying inspection acceptance criteria applicable to NSSS items and nuclear fuel.

2. Implementing inspection programs for the manufacture of NSSS equipment and nuclear fuel.

3. Requiring that its subcontractors establish and implement an inspection program for the subcontractors scope of effort.

D. Baldwin Associates is responsible for:

1. Inspection of its construction and installation activities.

2. Its subcontractors establishing and implementing inspection programs for the subcontractors' scopes of effort.

Approved Wilfred Cowell
Manager-QA

11 Oct 1980
Date

I. PURPOSE:

To establish the requirements for control of the identification, performance, and evaluation of construction testing which will assure that the structures, systems, or components being tested will perform satisfactorily in service. After turnover, the IP Nuclear Power Quality Assurance Program requirements described in the IP Nuclear Power Operational Quality Assurance Manual apply.

II. REQUIREMENTS:

A. Interface

The designing organizations specify the tests and the acceptance criteria for equipment within their respective scopes of design. BA plans and performs tests associated with construction. Checkout and initial operation tests will be directed/conducted by IP and supported by BA and other applicable vendor personnel.

B. General

IP and its contractors shall meet the following re-uirements:

1. The tests and acceptance criteria necessary to assure satisfactory performance will be specified in design documents, technical specifications, or other related documents.

2. Test programs shall be developed to assure that required tests are performed in accordance with approved written procedures which incorporate or reference the design requirements, limits, and acceptance criteria as specified by the appropriate design organization.

3. Written test procedures will be utilized to implement test programs. Individual test procedures shall contain or reference, as a minimum, the following provisions:

INFORMATION ONLY

a. Statement of the test objective.

b. Prerequisites to be fulfilled prior to the test, including availability of calibrated instrumentation and suitable environment.

c. Instructions for performance of the test, including requirement for verification that instruments selected are of the correct type, range, and accuracy.

d. Data to be acquired.

e. Accept/reject criteria.

4. Test procedures and results shall be documented to facilitate evaluation and to provide a permanent record.

5. Adequate test evaluation shall follow testing to determine whether performance characteristics conform to design. The need for repair or rework and/or retesting shall be identified as necessary.

III. DIVISION OF RESPONSIBILITY:

IP has assigned construction test control responsibilities as follows:

A. IP is responsible for:

1. Assurance that IP contracts or procurement documents require the contractor or vendor to establish and implement an adequate program for testing equipment and materials.

2. Periodic auditing of internal, vendor, and contractor activities to assure that testing is controlled in accordance with the requirements of this manual.

B. Sargent & Lundy is responsible for:

1. Identifying and specifying test requirements for certain systems and components. Specifications and descriptive material for such testing and related planning will be prepared in accordance with documented procedures, and systematically reviewed and approved by the same methods applicable to other phases of important safety related design.

2. Assistance to IP upon request in testing and evaluation of test results.

C. General Electric is responsible for:

1. Specifying the required tests and acceptance criteria for NSSS equipment and nuclear fuel.

2. Implementation of controlled programs for testing items in their scope of supply.

3. Evaluation of test results and certifications for IP's permanent records that NSSS equipment meets specified requirements.

4. GE subcontractors establishing and implementing adequate programs for control of test items in the subcontractors' scope of supply.

D. Baldwin Associates is responsible for:

1. Establishing and implementing a controlled program for the static checkout of equipment and components it installs.

2. BA subcontractors establishing and implementing adequate test control programs as appropriate.

Approved by [signature] Manager-QA 11 Oct 1985 Date

I. PURPOSE:

To establish the requirements which will assure that tools, gauges, instruments, and other measuring and testing devices are adequately controlled and calibrated and that accuracy is maintained in order to verify conformance to requirements.

II. REQUIREMENTS:

A. Interface

Control of measuring and test equipment is the function of organizations utilizing them.

B. General

IP and its contractors shall meet the following requirements:

1. Measuring and test equipment shall be calibrated at scheduled intervals by comparison with valid nationally recognized standards. If recognized standards are not available, the standards used shall be carefully preserved and available for traceability purposes.

2. Calibration intervals will be based upon the type of equipment, frequency of use, environment of use, and other conditions affecting accuracy.

3. Calibrations shall be performed using approved written procedures or appropriate manufacturers' manuals. Standards will be maintained and used in a controlled environment which will not adversely affect the calibration procedure.

4. Required environmental controls may include such items as temperature, humidity, cleanliness, and radioactivity to levels compatible with the accuracy and operating characteristics of the standard as detailed in the calibration procedure.

5. The calibration of each item of measuring and test equipment shall be controlled. Calibration control shall be visible, such as use of tags, labels, or decals attached to the equipment.

INFORMATION ONLY

6. Controls shall provide for identification of measuring and test equipment by appropriate records which shall contain the calibration history.

7. Equipment shall not be used past the expiration of the calibration period. If equipment is damaged, or suspected to need recalibration, it shall be rechecked as soon as possible, and, in any event, prior to use. If equipment is found to be out of calibration, an evaluation shall be made and documented of the validity of previous inspection or test results based on that equipment and of the acceptability of items previously inspected or tested.

8. Equipment found to be consistently out of calibration shall be evaluated for repair and replacement.

III. DIVISION OF RESPONSIBILITY:

IP has assigned responsibility for control of measuring and test equipment as follows:

A. IP is responsible for:

1. Incorporation of appropriate quality assurance program requirements for the control of measuring and test equipment into IP generated contracts or procurement documents.

2. Periodic auditing of internal, vendor, and contractor procedures and practices to verify that effective control of measuring and test equipment is provided in accordance with the requirements of this manual.

B. Sargent & Lundy is responsible for:

1. Direction of activities which require a quality assurance program for identification and control of measuring and test equipment. However, Sargent & Lundy consulting service is provided to assist IP in surveillance of these activities.

C. General Electric is responsible for:

1. Implementation of effective measures for the control of measuring and test equipment utilized for test and/or inspection of NSSS equipment and nuclear fuel.

2. Its subcontractors establishing and implementing effective measures for control of measuring and test equipment used.

D. Baldwin Associates is responsible for:

1. Establishing and implementing effective measures for the control of measuring and test equipment used by BA in construction, inspection, or test activities.

2. Its subcontractors establishing and implementing effective measures for control of measuring and test equipment used.

Approved Wilfred Conrad 11 Oct 1985
Manager-QA Date

I. PURPOSE:

To establish the requirements for a system which will assure proper handling, storage, shipping, preservation, and cleaning to prevent damage, deterioration, and loss of items.

II. REQUIREMENTS:

A. Interface

Vendors are required to provide information relative to handling, storage, and shipping of material, parts, and components to the Purchaser for use in storage and handling activities at the site. This information is contained in purchasing or technical documents.

B. General

IP and its contractors shall meet the following requirements:

1. Written and approved procedures for handling, storage, shipping, preservation, and cleaning of materials, parts, and components within the scope of this program shall be used.

2. Procurement documents shall require vendors and subcontractors to furnish procedures for handling, storage, shipping, preservation, and cleaning of items supplied.

3. Shipping containers shall be marked to identify the contents, the sender, and the destination. Tags securely attached to the shipping containers may be used if containers are too small or irregular in shape to be marked directly with the required information. Handling shall be controlled by written procedures.

4. Special markings shall be provided for packages containing items which are fragile or may sustain internal damage not readily detectable except by disassembly.

INFORMATION ONLY

5. Written instructions shall be provided for the preservation of items that are subject to deterioration or damage through exposure to air, moisture, radiation, or other environments during manufacturing and fabrication, storage, shipping, construction, and installation.

6. Items shall be preserved by such methods as required to preclude damage and which in themselves have no deleterious effects on the items. When special protective measures are provided by an agent which is consumed or rendered impotent, means shall be provided to periodically verify that protection is being maintained.

III. DIVISION OF RESPONSIBILITY

IP has assigned responsibilities for handling, storage, and shipping as follows:

A. IP is responsible for:

1. Incorporation of appropriate quality assurance program requirements for controlling the handling, storage, and shipping of equipment and materials into IP generated contracts and procurement documents.

2. Assignment of Nuclear Station Engineering to assure that IP procurement documents require vendors to provide information regarding proper handling, storage, and shipping with items they supply.

3. Periodic auditing of internal, vendor, and contractor activities to assure adequate handling, storage, and shipping in accordance with the requirements of this manual.

B. Sargent & Lundy is responsible for:

1. Review of procedures for handling, storage, and shipping of equipment and materials for adequacy.

C. General Electric is responsible for:

1. Its subcontractors implementing appropriate controls for their handling, shipping, and storage of NSSS equipment and nuclear fuel.

2. Its subcontractors providing information for proper handling, storage, and shipping.

3. Implementing appropriate controls for handling, storage, and shipping of items they supply.

D. Baldwin Associates is responsible for:

1. Handling and storage of equipment received at the site for use in construction of CPS.

2. Its subcontractors and vendors implementing appropriate controls for the handling, shipping, and storage of items in the subcontractors' scope.

3. Its subcontractors and vendors providing information for proper handling, storage, and shipping for items they supply.

Approved Wilfred Connell
Manager-QA

11 Oct 1985
Date

I. PURPOSE:

To establish the requirements for a system which identifies the status of material, parts, components, and assemblies through manufacturing and fabrication, inspection, testing, construction and installation to assure that only items that have passed the required inspections and tests are used or installed.

II. REQUIREMENTS:

A. Interface

Baldwin Associates interfaces with IP at the turnover of equipment, components, systems, and structures for checkout and initial operation. The systems employed by Baldwin Associates and IP for indicating status of inspection and tests also include controls to clearly indicate jurisdiction and safety conditions.

B. General

IP and its contractors shall meet the following requirements:

1. The inspection or test status of items shall be clearly identified. Markings which indicate status may include stamps applied directly to the item, tags, or labels attached to the item, routing cards that accompany the item, or records which are traceable to the item.

2. Visual evidence of status shall be documented and affixed to inspected items. A control stamp, signature, or initials shall be applied. If control stamps are used, a record of the assignment of control stamps shall be maintained.

3. If markings are applied directly to the item, there shall be consideration given to the effect of the markings on the item. If impression stamping is used, it shall conform to the requirements of applicable specifications, codes, and standards.

UNCONTROLLED COPY

4. The method of indicating test or inspection status shall clearly and positively show whether or not the required test or inspection has been passed.

5. A system, such as tagging of valves and switches, shall be established that indicates the status of structures, systems, and components to prevent inadvertent operation.

III. DIVISION OF RESPONSIBILITY

IP has assigned responsibilities for the inspection and test status identification as follows:

A. IP is responsible for:

1. Assurance that IP contracts or procurement documents require contractors and vendors to establish and implement adequate measures to indicate inspections, tests, and operating status.

2. Periodic auditing of internal, vendor, and contractor activities to assure that indication of status is in accordance with the requirements of this manual.

B. Sargent & Lundy is responsible for:

1. Providing S&L consulting service to assist IP in surveillance of inspection, tests, and operating status activities.

C. General Electric is responsible for:

1. Its subcontractors establishing and implementing adequate measures to indicate inspection and test status of NSSS equipment and nuclear fuel.

2. Developing and implementing adequate measures for the indication of inspection and test status appropriate to their scopes of supply.

D. Baldwin Associates is responsible for:

1. Its vendors and subcontractors establishing and implementing adequate measures for indication of inspection and test status during manufacture of equipment.

2. Developing and implementing a system to indicate inspection and test status during construction and installation activities.

Approved Wilfred Cornell
Manager - QA

11 Oct 1985
Date

I. PURPOSE:

To establish the requirements for positive identification and disposition of materials, parts, or components which do not meet technical or quality requirements of drawings or design specifications and to prevent the inadvertent use of such nonconforming items.

II. REQUIREMENTS:

A. Interface

Illinois Power interfaces with its vendors and subcontractors for the identification of nonconforming items. BA interfaces with IP for coordination with the appropriate design organization, i.e., General Electric, Sargent & Lundy, for disposition of the nonconforming condition. General Electric advises IP and S&L of the disposition of nonconforming items in its scope of supply which may affect the Balance of Plant.

INFORMATION ONLY

B. General

IP and its contractors shall meet the following requirements:

1. Procedures shall be established for the control of nonconforming items.

2. Nonconforming items shall be clearly identified.

3. Nonconforming items shall be placed in a segregated storage area when practical. Such storage areas shall be clearly identified as containing only nonconforming items.

4. Measures shall be established which control further use or installation of nonconforming items pending disposition.

5. A technical review shall be performed to determine the disposition of nonconforming items. The technical review shall be conducted by the same or equivalent organization which established the original design requirements.

6. The disposition of nonconforming items may be one of the following: a. use as is, b. rework (to drawing and specification requirements, c. repair (to an acceptable condition, d. reject (for this use), or e. non-hardware (for activities not affecting permanent plant hardware.)

7. Repair and rework procedures shall be qualified and approved as required by the applicable procurement documents, specifications, codes, and standards. Items which have been repaired or reworked shall be reinspected to appropriate acceptance criteria.

8. Procedures for control of nonconformances will include measures for notification to affected organizations.

9. Records shall be maintained to show objective evidence that the procedures for controlling nonconforming items have been followed.

III. DIVISION OF RESPONSIBILITY

IP has assigned responsibilities for control of nonconforming materials, parts, or components as follows:

A. IP is responsible for:

1. Establishing and implementing effective systems for the control of nonconformances encountered during their activities.

2. Designating in IP-generated contracts or procurement documents that contractors and vendors establish and implement effective systems for disposition and control of nonconformances.

3. Reviewing recommended dispositions, if provided, for concurrence. Provides dispositions to selected contractors' nonconformance reports (NCRs). Engineering justification for construction related nonconformances which are dispositioned "repair" or "use-as-is" or require a design document change.

4. Determining what additional review is required by the responsible design organization and reviewing recommended dispositions made by the responsible design organization.

5. Providing in-line reviews and approvals of selected contractors' NCRs prior to implementation to ensure compliance to the requirements of this manual.

6. Periodic audits of internal, vendors' and contractors' nonconformance systems to verify that control of nonconforming items is in accordance with the requirements of this manual.

B. Sargent & Lundy is responsible for:

1. Engineering justification for construction related nonconformances which are dispositioned "repair" or "use-as-is" or require a design document change as requested by IP. S&L shall provide a similar function for those BOP purchased items, materials, or services when the purchase order specification requires that the nonconformance be referred to the purchaser.

C. General Electric is responsible for:

1. Its subcontractors establishing and implementing effective nonconformance systems for NSSS equipment and nuclear fuel.

2. Establishing and implementing an effective nonconformance system for their scope of supply.

3. Dispositioning nonconforming items related to the NSSS and nuclear fuel as requested by IP.

D. Baldwin Associates is responsible for:

1. Its vendors and subcontractors establishing and implementing effective nonconformance systems for equipment supplied or installed by those subcontractors.

2. Establishing and implementing an effective system for the control of nonconformances encountered during construction and installation.

3. Establishing a system which refers selected nonconformances to IP for dispositions or coordination with the responsible design authority in obtaining dispositions and for obtaining IP Quality Assurance review and approval of the nonconformance.

Approved Milton Connell, Manager-QA — 11 Oct 1985, Date

I. PURPOSE:

To establish the requirements which assure that conditions determined to be adverse to quality are promptly corrected in a manner which precludes recurrence of such conditions.

II. REQUIREMENTS:

A. Interface

Those departments which manage or direct contractors will interface with those contractors for obtaining corrective action. Requirements for specific corrective action are transmitted by IP to the contractors.

B. General

IP and its contractors shall meet the following requirements:

1. A corrective action system shall be established.

2. Conditions adverse to quality shall be promptly identified and corrected.

3. For significant conditions adverse to quality, the corrective action shall include measures to preclude repetition, when appropriate.

4. Conditions adverse to quality shall be systematically analyzed for causes and referred to management for resolution.

5. Corrective action shall be evaluated to determine effectiveness.

6. Records shall be maintained which demonstrate that identified conditions adverse to quality have been corrected. The records shall document recommendations for corrective action and the implementation of corrective measures.

INFORMATION ONLY

III. DIVISION OF RESPONSIBILITY:

IP has assigned responsibilities for corrective action as follows:

A. IP is responsible for:

1. Implementing and maintaining a corrective action system for activities performed within the scope of this manual.

2. Assurance that IP contracts or procurement documents incorporate requirements for establishment of contractor or vendor corrective action systems.

3. Administration of an internal and external (on site contractors) trending program for the identification of conditions adverse to quality.

4. Administration of a Management Corrective Action Request (MCAR) Program, a management tool whereby the Vice President (Nuclear) and management of the responsible organization (either internal or external to IP) are advised of adverse conditions which require immediate corrective action.

5. Periodic auditing of internal, vendor, and contractor activities to assure that corrective action systems have been implemented in accordance with the requirements of this manual.

B. Sargent & Lundy is responsible for:

1. Implementing and maintaining a corrective action system governing its scope of work.

C. General Electric is responsible for:

1. Implementing and maintaining a corrective action system governing its scope of work.

2. Its subcontractors establishing a corrective action system for the subcontractors' activities associated with NSSS equipment and nuclear fuel.

D. Baldwin Associates is responsible for:

1. Implementing and maintaining a corrective action system governing its scope of work.

2. Its subcontractors instituting corrective action systems governing activities associated with the supply, construction, or installation of equipment by those subcontractors.

Approved Wilfred Carrell
Manager-QA

11 Oct 1985
Date

I. PURPOSE:

To establish the requirements for collection, compilation, storage, and retrieval of records necessary to provide evidence of quality in the design, procurement, fabrication, construction, installation, inspection, and testing activities related to the Clinton Power Station.

II. REQUIREMENTS:

A. Interface

Interfaces regarding quality assurance records exist where there is a division of the record keeping responsibility and subsequent turnover of records to IP. Some quality records are kept by manufacturers and are maintained on an available basis for a specific period of time. IP requires that these quality records be transferred to IP as major milestones are completed or after the manufacturers no longer plan to keep them.

INFORMATION ONLY

B. General

IP and its contractors shall meet the following requirements:

1. Sufficient records shall be prepared as work is performed to provide evidence of the quality of items and of activities performed.

2. Quality records shall be consistent with applicable codes, standards, specifications, and contracts and shall be adequate for use in management of the Clinton Power Station.

3. Quality records shall be filed in a timely and orderly manner to allow for access and retrievability. They shall be maintained in a file, room, or area that provides controlled access and protection against fire, flooding, vermin, and decay.

4. The original quality of the records shall be preserved to maintain archival quality. The quality of the record shall enable the observer to readily identify information contained on the record.

5. Records shall typically include results of reviews, inspections, tests, audits, monitoring of work performance, and materials analysis. They shall also include as appropriate, closely related data such as qualifications of personnel, procedures, and equipment.

6. Records which correctly identify "as built" conditions of items in the plant shall be maintained for the service life of the items. These records include material certification and test data for traceability and quality verification; reports of inspections, examinations, and test results for conformance verifications; specifications, drawings, and records of nonconformance with resolutions.

7. Inspection and test records shall identify the inspector or data recorder, type of observation, results, acceptability, and action taken for any problems noted.

III. DIVISION OF RESPONSIBILITY:

IP has assigned the responsibilities for quality assurance records as follows:

A. IP is responsible for:

1. Assuring that IP generated contracts or procurement documents specify the following:

   a. Requirements for the generation, maintenance, and control of technical and quality records.

   b. Requirements for the retention of appropriate technical and quality records at vendors' plants.

   c. Requirements for transfer of appropriate technical and quality records to IP at the end of the specified retention period.

2. Developing and implementing the Records Management Program, procedures and standards covering the identification, preparation, collection, review, turnover/transfer, processing, retention, retrieval and control of records generated in performing activities within the scope of the program.

3. Verifying the BA administered record maintenance system for IP during the construction phase of CPS.

4. Coordinating the management of site quality records to ensure that a smooth and timely turnover of records and responsibility to the operating staff occurs.

5. Periodic auditing of internal, contractor, and vendor activities to assure that control of quality assurance records is in accordance with the requirements of this manual.

6. Developing and implementing a quality assurance records verification program to assure that these records meet the requirements of this manual.

B. Sargent & Lundy is responsible for:

1. Developing and implementing a record-keeping system for the records it produces during design of the Balance of Plant and associated activities.

2. Turnover to IP of appropriate quality records accumulated by S&L during design, construction, and testing of the plant.

C. General Electric is responsible for:

1. Its subcontractors employing appropriate controls of quality assurance records required for subcontractors' work on NSSS equipment and nuclear fuel.

2. Developing and implementing a record-keeping system for the documentation and quality records required for NSSS equipment and nuclear fuel.

3. Turnover of appropriate documents and quality records generated by GE and its subcontractors to IP.

D. Baldwin Associates is responsible for:

1. Its subcontractors and vendors employing appropriate controls of quality records as required for the supply, construction and installation of equipment by those contractors.

2. Developing and implementing a record-keeping system for the quality records generated or received during construction and installation.

3. Turnover of appropriate documents and quality records generated by BA and its subcontractors to IP.

Approved Clifford Caudill
Manager-QA

11 Oct 1985
Date

I. PURPOSE:

To establish the requirements for a planned system of periodic audits which verify compliance with the quality assurance program and measure its effectiveness.

II. REQUIREMENTS:

A. Interface

Audits and surveillances are among the main interfaces between IP and other participants in the Clinton Power Station. IP Quality Assurance interfaces with each contractor at the operating level and at the management quality assurance level. Each contractor's audit function is to perform independently within its scope of responsibility, interfacing similarly with sub-tier vendors or contractors.

INFORMATION ONLY

B. General

IP and its contractors shall meet the following requirements:

1. Organizations whose functions affect the quality of the safety related aspects of the Clinton Power Station shall institute a comprehensive system of planned, periodic audits. The audit system will be sufficient to include the full range of activities covered by the scope of the applicable quality assurance program. The audit system will include provisions for both internal and external audits.

2. The audit system plan shall provide for regularly scheduled audits based on the status and importance of the activities.

3. Personnel conducting audits shall have no direct responsibility to the organization being audited. The lead member of the audit team shall be a qualified audit team leader and shall instruct the other members during audit preparation.

4. Written audit plans shall be developed for each audit to be performed. These plans shall identify the scope, requirements, activities to be audited, organizations involved, applicable documents, schedule, and written procedures or checklists.

5. Audit reports shall be generated and retained.

6. Audit reports shall be transmitted to and reviewed by the appropriate managerial level having responsibility for the area audited. These managers shall be responsible for determining and implementing suitable action in response to the audit findings.

7. Audited organizations shall respond to audit reports as requested, stating corrective action taken or planned to correct findings and prevent recurrence.

8. Audit findings shall be followed up to verify that corrective action has been completed. Results of this followup shall be documented.

III. DIVISION OF RESPONSIBILITY:

IP has assigned responsibilities for auditing as follows:

A. IP is responsible for:

1. Assuring that IP contracts or procurement documents require contractors and vendors to establish and implement appropriate audit programs.

2. Establishing an internal audit program and audit each IP organization performing activities within the scope of this program.

3. Establishing an external audit program and audit contractors and vendors performing activities within the scope of this QA program to verify compliance to their respective quality assurance programs, contract requirements, and applicable requirements of this manual.

4. Coordinating the performance of independent audits of the IP Quality Assurance department for the Executive Vice President.

B. Sargent & Lundy is responsible for:

1. Instituting an audit program assuring that its safety related activities associated with CPS are in compliance with the Sargent & Lundy Quality Assurance Program and this manual.

C. General Electric is responsible for:

1. Instituting an audit program assuring that safety related activities associated with NSSS equipment and nuclear fuel are in compliance with the General Electric Quality Assurance Program and this manual.

2. Its subcontractors instituting appropriate audit programs.

3. Auditing its subcontractors to assure that activities associated with the subcontractors' scopes of effort are in compliance with the subcontractors' quality assurance programs.

D. Baldwin Associates is responsible for:

1. Instituting an audit program assuring that activities associated with construction and installation effort are in compliance with the Baldwin Associates' quality assurance program and this manual.

2. Its vendors and subcontractors instituting appropriate audit programs.

3. Auditing its vendors and subcontractors' to assure that activities associated with the subcontractors' scope of effort are in compliance with the subcontractors' quality assurance programs.

CPS

APPENDIX A

Quality Assurance Program Scope

The scope of the Quality Assurance Program described in this manual is based on Sargent & Lundy's Procedure GQ3.03 - "Classification Criteria". A recent version of the Clinton Classification Criteria includes the tabulation on the following pages which is shown here for illustration only. If an authentic list is needed please refer to the current revision of S&L's Clinton Classification Criteria document.

The last column of each of the following pages shows the applicable QA requirements of the structures, systems, and components. The applicable Quality Assurance requirements are as follows:

1. "App. B" indicates that the structure, system, or component (s/s/c) must be designed, purchased, constructed, tested, etc. in accordance with the Quality Assurance requirements of 10CFR50, Appendix B which is implemented by the Quality Assurance Programs described in this manual.

2. "N/A" indicates that the s/s/c is not applicable to the requirements of 10CFR50, App. B.

The reader is cautioned that the attached list is furnished for illustrative purposes only. Information required in the performance of work should be obtained by consulting the current source document.

INFORMATION ONLY

CLASSIFICATION CRITERIA
Identification and Classification
Of Safety-Related Structures,

SARGENT & LUNDY
CHICAGO

CLINTON POWER STATION
PROJECT NOS. 4536/4597
REV. 10 9-12-83

Table 3.1 - Classification of Principal Structures, Systems and Components

Number	PRINCIPAL STRUCTURES, SYSTEMS & COMPONENTS	SAFETY[5] (Class 1,2, 3 or Other)	SEISMIC[5] (Category I or N/A)	QUALITY[5] (Group A,B, C,D or N/A)	ELECTRICAL[5] (Class 1E, Non-Class 1E or N/A	QA REQ'MTS[5] (App.B or N/A)
	REFERENCES:	ANSI N18.2 (ANS-21), ANS-22, ANS-23	Reg. Guide 1.29	Reg. Guide 1.26,ASME-Section III	Reg. Guide 1.32 (IEEE-308)	Reg. Guide 1.28 (ANSI-N45.2), Reg. Guide 1.64 (ANSI-N45.2.11)
I	Reactor System					
	1. Reactor vessel	1	I	A	N/A	B
	2. Reactor vessel support skirt	1	I	N/A	N/A	B
	3. Reactor vessel appurtances, pressure retaining portions	1	I	A	N/A	B
	4. CRD housing supports	2	I	N/A	N/A	B
	5. Reactor internal structures, engineered safety features	2	I	N/A	N/A	B
	6. Reactor internal structures, other	Other	N/A	N/A	N/A	N/A
	7. Control rods	2	I	N/A	N/A	B
	8. Control rod drives	2	I	N/A	N/A	B
	9. Core support structure	2	I	N/A	N/A	B
	10. Power range detector hardware	2	I	N/A	1E	B
	11. Fuel assemblies	2	I	N/A	N/A	B
II	Nuclear Boiler System					
	1. Vessels, level instrumentation-condensing chambers	1	I	A	N/A	B
	2. Piping, relief valve discharge and vent, including vacuum relief valves	3	I	C	N/A	B
	3. Piping, main steam within outboard isolation valve	1	I	A	N/A	B
	4. Piping, feedwater within outboard isolation valve	1	I	A	N/A	B
	5. Piping, other within outboard isolation valves	1	I	A	N/A	B
	6. Safety/relief valves	1	I	A	1E	B
	7. Valves, main steam isolation valves	1	I	A	1E	B
	8. Valves, other than isolation valves and within drywell	1	I	A	1E	B
	9. Mechanical modules, instrumentation, with safety function	2	I	B	N/A	B
	10. Electrical Modules with safety function	*	I	N/A	1E	B
	11. Cables, with safety function	*	I	N/A	1E	B
	12. Quencher, Discharge Device	3	I	C	N/A	B
	13. Piping, from outboard isolation valve to shutoff valve	2	I	B	N/A	B
	14. Valves, shutoff	2	I	B	1E	B
	15. Valves, feedwater isolation	1	I	A	1E	B
	16. SRVM System	*	I	N/A	1E	B
III	Recirculation System					
	1. Piping	1	I	A	N/A	B
	2. Pumps	1	I	A	N/A	B
	3. Valves	1	I	A	Non-1E	B
	4. Motor, pump	Other	I	N/A	Non-1E	B
	5. Electrical modules, with safety function	*	I	N/A	1E	B
	6. Cable with safety function	*	I	N/A	1E	B
	7. MFMG Set and Panel	Other	N/A	N/A	Non-1E	N/A
	8. RPT Circuit Breakers	*	I	N/A	1E	B
	9. Recirc Pump Switchgear except RPT circuit breakers	Other	N/A	N/A	Non-1E	N/A

* - For definitions and instructions, see Section 2.0

INFORMATION ONLY

CLASSIFICATION CRITERIA
Identification and Classification of Safety-Related Structures Systems and Components

SARGENT & LUNDY ENGINEERS

CLINTON POWER STATION
PROJECT NOS. 4536/4597
REV. 10 9-12-83

Table 3.1 - Classification of Principal Structures, Systems and Components

Number	PRINCIPAL STRUCTURES, SYSTEMS & COMPONENTS	SAFETY[a] (Class 1,2, 3 or Other)	SEISMIC[a] (Category I or N/A)	QUALITY[a] (Group A,B, C,D or N/A)	ELECTRICAL[a] (Class 1E, Non-Class 1E or N/A)	QA REQ'MTS[a] (App. B or N/A)
	REFERENCES:	ANSI N18.2 (ANS-21), ANS-22, ANS-23	Reg. Guide 1.29	Reg.Guide 1.26,ASME-Section III	Reg. Guide 1.32(IEEE-308)	Reg. Guide 1.28 (ANSI-N45.2),Reg. Guide 1.64 (ANSI-N45.2.11)
IV	CRD Hydraulic System					
	1. Voided					
	2. Valves, scram discharge volume lines and containment isolation	2	I	B	1E	B
	3. Valves insert and withdrawal lines	2	I	B	N/A	B
	4. Valves, other	Other	N/A	D	Non-1E	N/A
	5. Piping, scram discharge volume lines and containment penetration	2	I	B	N/A	B
	6. Piping, insert and withdrawal lines	2	I	B	N/A	B
	7. Piping, other	Other	N/A	D	N/A	N/A
	8. Hydraulic control unit					
	a. Scram solenoid valves, test switches, and associated wiring	2	I	D	Non-1E	B
	b. All other electrical components	Other	I	D	Non-1E	B
	9. Electrical modules, with safety function	*	I	N/A	1E	B
	10.Cable, with safety function	*	I	N/A	1E	B
	11.CRD water pumps	Other	N/A	D	Non-1E	N/A
V	Standby Liquid Control System					
	1. Standby liquid control tank	2	I	B	N/A	B
	2. Pump	2	I	B	N/A	B
	3. Pump motor	Other	I	N/A	Non-1E	B
	4. Valves, explosive	1	I	A	Non-1E	B
	5. Valves, drywell, isolation and within	2	I	A	N/A	B
	6. Valves, beyond drywell isolation valve	2	I	B	Non-1E	B
	7. Piping, downstream of explosive valves	1	I	A	N/A	B
	8. Piping, upstream of explosive valves	2	I	B	N/A	B
	9. Electrical modules, with safety function	*	I	N/A	1E	B
	10.Cable, with safety function	*	I	N/A	1E	B
VI	Neutron Monitoring System					
	1. Piping, TIP	2	I	B	N/A	B
	2. Electrical modules, IRM and APRM	*	I	N/A	1E	B
	3. Cable, IRM and APRM	*	I	N/A	1E	B
	4. Valves, TIP isolation	2	I	B	N/A	B
	5. Purge Valve	2	I	B	1E	B
VII	Reactor Protection					
	1. Voided					
	2. Cable with safety function	*	I	N/A	1E	B
	3. Voided					
	4. Solenoid inverters, EPA's and output breakers	*	I	N/A	1E	B
	5. Solenoid inverters, except 4 above, and solenoid distribution panels	Other	I	N/A	Non-1E	B
	6. Instrument inverters and distribution panels	*	I	N/A	1E	B
	7. Electrical modules with safety function	*	I	N/A	1E	B

[a] For definitions and instructions, see section 2.0
Notes (1) and (g) - see page 24

CLASSIFICATION CRITERIA Identification and Classification of Safety-Related Structures Systems and Components	SARGENT & LUNDY ENGINEERS	CLINTON POWER STATION PROJECT NOS. 4536/4597 REV. 10 9-12-83

Table 1.1 - Classification of Principal Structures, Systems and Components

Number	PRINCIPAL STRUCTURES, SYSTEMS & COMPONENTS	SAFETY[d] (Class 1,2, 3 or Other)	SEISMIC[d] (Category I or N/A)	QUALITY[d] (Group A,B, C,D or N/A)	ELECTRICAL[d] (Class 1E, Non Class 1E or N/A)	QA REQ'MTS[d] (App. B or N/A)
	REFERENCES:	ANSI N18.2 (ANS-21), ANS-22, ANS-23	Reg. Guide 1.29	Reg.Guide 1.26,ASME-Section III	Reg. Guide 1.32(IEEE-308)	Reg. Guide 1.28 (ANSI-N45.2), Reg. Guide 1.64 (ANSI-N45.2.11)
VIII	Leak Detection System					
	1. Temperature element	2	I	N/A	1E	B
	2. Temperature and differential temperature switches	2	I	N/A	1E	B
	3. Differential flow switch	2	I	N/A	1E	B
	4. Differential pressure switch	2	I	N/A	1E	B
	5. Differential flow summer & square foot converter	2	I	N/A	1E	B
	6. Pressure transmitter and differential pressure transmitter	2	I	B	1E	B
IX	Process Radiation Monitors					
	1. Electrical modules, main steam line, containment building, fuel transfer vent plenum, containment building exhaust main control room intake	*	I	N/A	1E	B
	2. Cable, with safety function	*	I	N/A	1E	B
X	RHR System					
	1. Heat exchangers,shell side	2	I	B	N/A	B
	2. Heat exchangers,tube side	3	I	C	N/A	B
	3. Piping within outboard, isolation valves	1	I	A	N/A	B
	4. Piping, beyond outboard isolation valves	2	I	B	N/A	B
	5. Pumps	2	I	B	N/A	B
	6. Pump motors	*	I	N/A	1E	B
	7. Valves,isolation LPCI line	1	I	A	1E	B
	8. Valves,isolation,other	2	I	B	1E	B
	9. Pump suction from suppression pool,piping,valves, including isolation valves	2	I	B	1E	B
	10. Valves, beyond isolation valves	2	I	B	1E	B
	11. Mechanical modules	2	I	B	N/A	B
	12. Electrical modules, with safety function	*	I	N/A	1E	B
	13. Cable with safety function	*	I	N/A	1E	B
	14. Containment spray piping and nozzles	2	I	B	N/A	B
	15. Suction strainers(note f)	Other	I	D	N/A	B
XI	Low-Pressure Core Spray					
	1. Piping, within outboard isolation valve	1	I	A	N/A	B
	2. Piping, beyond outboard isolation valve	2	I	B	N/A	B
	3. Pump	2	I	B	N/A	B
	4. Pump motor	*	I	N/A	1E	B
	5. Valves,isolation and within containment	1	I	A	1E	B
	6. Valves,beyond outboard isolation valves	2	I	B	1E	B
	7. Pump suction from suppression pool,piping, valves, including isolation valves	2	I	B	1E	B
	8. Electrical modules with safety function	*	I	N/A	1E	B
	9. Cable,with safety function	*	I	N/A	1E	B
	10. Suction strainer (note f)	Other	I	D	N/A	B

[d] For definitions and instructions, see section 2.0
Note (f) - see page 24

FOR ILLUSTRATION ONLY

CLASSIFICATION CRITERIA
Identification and Classification of Safety-Related Structures Systems and Components

SARGENT & LUNDY ENGINEERS CHICAGO

CLINTON POWER STATION
PROJECT NOS. 4536/4597
REV. 9 3-11-83

Table 3.1 - Classification of Principal Structures, Systems and Components

Number	PRINCIPAL STRUCTURES, SYSTEMS & COMPONENTS	SAFETY[6] (Class 1,2, 3 or Other)	SEISMIC[6] (Category I or N/A)	QUALITY[6] (Group A,B, C,D or N/A)	ELECTRICAL[6] (Class 1E, Non-Class 1E or N/A)	QA REQ'MTS[6] (App.B or N/A)
	REFERENCES:	ANSI N18.2 (ANS-21), ANS-22, ANS-23	Reg. Guide 1.29	Reg. Guide 1.26, ASME-Section III	Reg. Guide 1.32 (IEEE-308)	Reg. Guide 1.28 (ANSI-N45.2), Reg. Guide 1.64 (ANSI-N45.2.11)
XII	High-Pressure Core Spray					
	1. Piping, within outboard isolation valve	1	I	A	N/A	B
	2. Piping, return test line to RCIC storage tank beyond second isolation valve	Other	N/A	D	N/A	N/A
	3. Piping beyond outboard isolation valve, other	2	I	B	N/A	B
	4. Pump	2	I	B	N/A	B
	5. Pump motor	*	I	N/A	1E	B
	6. Valves, outboard isolation and within containment	1	I	A	1E	B
	7. Valves, beyond isolation valves, motor operated	2	I	B	1E	B
	8. Valves, other	2	I	B	1E	B
	9. Pump suction from suppression pool, piping, valves, including isolation valves	2	I	B	1E	B
	10. Pump suction from RCIC storage tank, piping, valves	2	I	B	1E	B
	11. Electrical modules, with safety function	*	I	N/A	1E	B
	12. Electrical auxiliary equipment	*	I	N/A	1E	B
	13. Cable, with safety function	*	I	N/A	1E	B
	14. Suction strainer (note f)	Other	I	D	N/A	B
XIII	Core System					
	1. Piping, within outboard isolation valves and up to the main steam	1	I	A	N/A	B
	2. RCIC steam piping, beyond outboard isolation valve	2	I	B	N/A	B
	3. RCIC turbine exhaust to suppression pool	2	I	B	N/A	B
	4. RCIC pump suction from suppression pool, piping, valves, including isolation valves	2	I	B	1E	B
	5. RCIC pump discharge to condensate storage tank within second isolation valve, piping, valves, including isolation valve	2	I	B	1E	B
	6. RCIC pump discharge to condensate storage tank beyond second isolation valve, piping, valves	Other	N/A	D	Non-1E	N/A

[6] - For Definitions and Instructions, see Section 2.0
Note (f) - See page 24

CLASSIFICATION CRITERIA Identification and Classification of Safety-Related Structures, System and Components	SARGENT & LUNDY CHICAGO	CLINTON POWER STATION PROJECT NOS. 4536/4597 REV. 10 9-12-83

Table 3.1 - Classification of Principal Structures, Systems and Components

Number	PRINCIPAL STRUCTURES, SYSTEMS & COMPONENTS	SAFETY[δ] (Class 1,2, 3 or Other)	SEISMIC[δ] (Category I or N/A)	QUALITY[δ] (Group A,B, C,D or N/A)	ELECTRICAL[δ] (Class 1E, Non-Class 1E or N/A	QA REQ'MTS[δ] (App.B or N/A)
	REFERENCES:	ANSI N18.2 (ANS-21), ANS-22, ANS-23	Reg. Guide 1.29	Reg. Guide 1.26,ASME-Section III	Reg. Guide 1.32 (IEEE-308)	Reg. Guide 1.28 (ANSI-N45.2), Reg. Guide 1.64 (ANSI-N45.2.11)
	7. Pumps	2	I	B	N/A	B
	8. Pump motor	*	I	N/A	1E	B
	9. Valves, isolation and within	1	I	A	1E	B
	10. Valves, other	2	I	B	1E	B
	11. Turbine	2	I	N/A	N/A	B
	12. Electrical modules, with safety function	*	I	N/A	1E	B
	13. Cable, with safety function	*	I	N/A	1E	B
	14. Suction strainer (note 7)	Other	I	D	N/A	B
XIV	Fuel Service Equipment					
	1. Fuel preparation machine	3	I	N/A	N/A	B
	2. General purpose grapple	Other	N/A (h)	N/A	N/A	N/A
XV	Reactor Vessel Service Equipment					
	1. Steamline plugs	Other	N/A	N/A	N/A	N/A
	2. Dryer and separator strongback and RPV head strongback	Other	N/A	N/A	N/A	B
XVI	In-Vessel Service Equipment					
	1. Control rod grapple	Other	N/A (h)	B	N/A	N/A
XVII	Refueling Equipment					
	1. Refueling equipment platform assembly	2	I	N/A	Non-1E	B
	2. Refueling bellows	Other	N/A	N/A	N/A	N/A
	3. Bellows, blind flange and spool pieces that form a part of containment boundary	2	I	N/A	N/A	B
	4. Fuel transfer tube	Other	N/A	N/A	N/A	N/A
	5. Isolation valves (fuel transfer tube)	Other	N/A	D	N/A	N/A
	6. Containment penetration sleeve assembly (fuel transfer tube)	2	I	B	N/A	B
XVIII	Storage Equipment					
	1. Fuel Storage Racks	2	I	N/A	N/A	B
	2. Defective Fuel Storage Container	3	I	N/A	N/A	B
	3. In-Vessel Rack (Temporary)	2	I	N/A	N/A	B
XIX	Radwaste System					
	1. Tanks, Atmospheric	Other	N/A	D	N/A	B[6]
	2. Heat Exchangers	Other	N/A	D	N/A	B
	3. Piping and valves forming part of containment boundary	2	I	B	1E	B
	4. Piping, other	Other	N/A	D	N/A	B
	5. Pumps	Other	N/A	D	N/A	B
	6. Valves, flow control and filter system	Other	N/A	D	Non-1E	B

δ - For Definitions and Instructions, see Section 2.0

Notes (6), (f), and (h), see page 24

FOR ILLUSTRATIONS ONLY

CLASSIFICATION CRITERIA
Identification and Classification of Safety-Related Structures, Systems and Components

SARGENT & LUNDY ENGINEERS

CLINTON POWER STATION
PROJECT NOS. 4536/4597
REV. 9 3-11-83

Table 3.1 - Classification of Principal Structures, Systems and Components

Number	PRINCIPAL STRUCTURES, SYSTEMS & COMPONENTS	SAFETY∅ (Class 1,2, 3 or Other)	SEISMIC∅ (Category I or N/A)	QUALITY∅ (Group A,B, C,D or N/A)	ELECTRICAL∅ (Class 1E, Non-Class 1E or N/A	QA REQ'MTS.∅ (App. B or N/A)
	REFERENCES:	ANSI N18.2 (ANS-21), ANS-22, ANS-23	Reg. Guide 1.29	Reg. Guide 1.26, ASME-Section III	Reg. Guide 1.32 (IEEE-308)	Reg. Guide 1.28 (ANSI-N45.2), Reg. Guide 1.64 (ANSI-N45.2.11)
	7. Valves, other	Other	N/A	D	Non-1E	B
	8. Mechanical modules	Other	N/A	D	N/A	B
	9. Pump Motors	Other	N/A	N/A	Non-1E	N/A
XX	Reactor Water Cleanup System					
	1. Vessels: Filter/demineralizer	Other	N/A	C	N/A	N/A
	2. Heat Exchangers	Other	N/A	C	N/A	N/A
	3. Piping within drywell and drywell to containment penetration guardpipe up to outboard containment isolation valve	1	I	A	N/A	B
	4. Piping from outboard containment isolation valve to pumps, back to containment. Excluding penetration. All piping within containment. Blowdown piping downstream of outboard containment isolation valve up to shut-off valves.	Other	I	C	N/A	B
	5. Pumps	Other	N/A	C	N/A	N/A
	6. Valves, drywell isolation valves and within drywell	1	I	A	1E	B
	7. Valves, beyond outboard containment isolation valves	Other	N/A	D	Non-1E	N/A
	8. Mechanical modules	Other	N/A	C	N/A	N/A
	9. Piping, return to reactor pressure vessel from inboard containment isolation valve up to junction with feedwater	2	I	B	N/A	B
	10. Piping, between inboard and outboard containment isolation valves	2	I	B	N/A	B
	11. Valves, containment iso.	2	I	B	1E	B
	12. Piping, downstream of blowdown shut-off valves to main condenser and radwaste	Other	N/A	D	N/A	N/A
	13. Filter/Demineralizer precoat subsystem	Other	N/A	D	N/A	N/A
	14. Sample station	Other	N/A	D	N/A	N/A
	15. Nonregenerative heat exchanger shell and component cooling water piping	Other	N/A	D	N/A	N/A
	16. Pump motors	*	N/A	N/A	Non-1E	N/A
XXI	Fuel Pool Cooling and Cleanup System					
	1. Vessels, filter/demineralizers	Other	N/A	D	N/A	N/A
	2. Vessels, other	3,Other	I,N/A	C	N/A	B,N/A
	3. Heat exchangers	3	I	C	N/A	B
	4. Piping	3,other	I,N/A	C,D	N/A	B,N/A
	5. Pumps	3	I	C	N/A	B
	6. Valves and piping, containment isolation	2	I	B	1E	B
	7. Valves and piping filter demineralizers	Other	N/A	D	Non-1E	N/A
	8. Makeup system, shutdown service water system	3	I	C	N/A	B
	9. Makeup to FPCC from condensate storage tanks	Other	N/A	D	Non-1E	N/A
	10. RHR Connection	3	I	C	N/A	B
	11. Fuel pool cooling pump motors	Other	I	N/A	1E	B
	12. Cable with safety function	*	I	N/A	1E	B
	13. Electrical modules with safety function	*	I	N/A	1E	B

∅-For definitions and Instructions, see section 2.0

CLASSIFICATION CRITERIA
Identification and Classification of Safety-Related Structures, Systems and Components

SARGENT & LUNDY ENGINEERS

CLINTON POWER STATION
PROJECT NOS. 4536/4597
REV. 10 9-12-83

Table 3.1 - Classification of Principal Structures, Systems and Components

Number	PRINCIPAL STRUCTURES, SYSTEMS & COMPONENTS	SAFETY∅ (Class 1,2, 3 or Other)	SEISMIC∅ (Category I or N/A)	QUALITY∅ (Group A,B C,D or N/A)	ELECTRICAL∅ (Class 1E, Non-Class 1E or N/A	QA REQ'MTS.∅ (App. B or N/A)
	REFERENCES:	ANSI N18.2 (ANS-21), ANS-22, ANS-23	Reg. Guide 1.29	Reg. Guide 1.26, ASME-Section III	Reg. Guide 1.32 (IEEE-308)	Reg. Guide 1.28 (ANSI-N45.2), Reg. Guide 1.64 (ANSI-N45.2.11)
XXII	Control Room Panels					
	1. Electrical modules, with safety function	*	I	N/A	1E	B
	2. Cable, with safety function	*	I	N/A	1E	B
XXIII	Local Panels and Racks					
	1. Electrical modules, with safety function	*	I	N/A	1E	B
	2. Cable, with safety function	*	I	N/A	1E	B
XXIV	Off-Gas System					
	1. Tanks	Other	N/A	D	N/A	B(6)
	2. Heat exchangers	Other	N/A	D	N/A	B
	3. Piping	Other	N/A	D	N/A	B
	4. Pumps	Other	N/A	D	N/A	B
	5. Valves, flow control	Other	N/A	D	Non-1E	B
	6. Valves, other	Other	N/A	D	Non-1E	B
	7. Voided					
	8. Pressure vessels	Other	N/A	D	N/A	B
	9. Pump motors	Other	N/A	N/A	Non-1E	N/A
XXV	Shutdown Service Water Systems for shutdown equipment cooling					
	1. Piping	3	I	C	N/A	B
	2. Pumps	3	I	C	N/A	B
	3. Pump motors	*	I	N/A	1E	B
	4. Valves, isolation	2	I	B	1E	B
	5. Valves, other	3	I	C	1E	B
	6. Electrical modules with safety function	*	I	N/A	1E	B
	7. Cable, with safety function	*	I	N/A	1E	B
XXVI	Plant Service Water Systems for Other Purposes					
	1. Piping and valves, other	Other	N/A	D	Non-1E	N/A
	2. Pumps	Other	N/A	D	N/A	N/A
	3. Motors	Other	N/A	N/A	Non-1E	N/A
XXVII	Instrument breathing and Service Air Systems					
	1. Vessels, accumulators supporting S-R systems	3	I	C	N/A	B
	2. Piping & Valves in lines bet. accumulators & S-R Systems	3	I	C	1E	B
	3. Piping & Valves forming part of containment boundary	2	I	B	1E	B
	4. Control Room Emergency Breathing Air	Other	I	C	1E	B
	5. Remaining Air Systems, N-S-R	Other	N/A	D	Non-1E	N/A
XXVIII	Diesel Generator Systems					
	1. Fuel day tanks	3	I	C	N/A	B
	2. Diesel fuel storage tanks	3	I	C	N/A	B
	3. Piping and valves, fuel oil system	3	I	C	1E	B
	4. Pumps, fuel oil transfer	3	I	C	N/A	B
	5. Pump motors, fuel oil transfer system	*	I	N/A	1E	B

∅-For definitions and instructions, see section 2.1
Note (6) - see page 24

FOR ILLUSTRATION ONLY
A-8

CLASSIFICATION CRITERIA
Identification and Classification of Safety-Related Structures Systems and Components

SARGENT & LUNDY ENGINEERS

CLINTON POWER STATION
PROJECT NOS. 4536/4597
REV. 8 7-03-91

Table 3.1 - Classification of Principal Structures, Systems and Components

Number	PRINCIPAL STRUCTURES, SYSTEMS & COMPONENTS	SAFETY[a] (Class 1,2, 3 or Other)	SEISMIC[a] (Category I or N/A)	QUALITY[a] (Group A,B, C,D or N/A)	ELECTRICAL[a] (Class 1E, Non-Class 1E or N/A)	QA REQ'MTS[a] (App. B or N/A)
	REFERENCES:	ANSI N18.2 (ANS-21), ANS-22, ANS-23	Reg. Guide 1.29	Reg.Guide 1.26,ASME-Section III	Reg. Guide 1.32(IEEE-308)	Reg. Guide 1.28 (ANSI-N45.2),Reg. Guide 1.64 (ANSI-N45.2.11)
	Diesel Generator Systems (cont'd)					
	6. Starting Air System					
	a. Piping,valves & tanks	3	I	C	1E	B
	b. Piping & valves upstream of check valve between compressor and air receiver	Other	I	D	Non-1E	N/A
	7. Diesel generators	3	I	N/A	1E	B
	8. Diesel generator exhaust to building boundary	2	I	B	N/A	B
	9. D.G. exhaust outside of building boundary	Other	N/A	N/A	N/A	N/A
	10. Voided					
	11. Electrical modules, with safety function	*	I	N/A	1E	B
	12. Cable,with safety function	*	I	N/A	1E	B
	13. Diesel engine cooling water system	3	I	C	1E	B
	14. Diesel engine lubrication system	3	I	C	1E	B
	15. Combustion air system	3	I	C	N/A	B
	16. Air dryers & associated piping, controls & cables	Other	N/A	D	N/A	N/A
XXIX	Standby Gas Treatment System					
	1. Filter units	2	I	N/A	N/A	B
	2. Air piping	2	I	N/A	N/A	B
	3. Cable with safety function	*	I	N/A	1E	B
	4. Fans/Dampers	2	I	N/A	1E	B
	5. Electric heaters, instrumentation & control with a safety function	2	I	N/A	1E	B
XXX	Power Conversion System					
	1. Main steam piping from second isolation valve to & including first shutoff valve	2	I	B	N/A	B
	2. Main steam branch piping between the second isolation valve and the first shutoff valve, from branch point at main steam piping to & including the first valve in the branch line	2	I	B	N/A	B
	3. Main steam piping between the shutoff valve & the turbine main stop valve	Other	N/A	D	N/A	N/A(2)
	4. Turbine bypass piping	Other	N/A	D	N/A	N/A
	5. Main steam branch piping between the first shutoff valve downstream of the second isolation valve & the turbine main stop valve	Other	N/A	D	N/A	N/A
	6. Turbine stop valves,turbine control valves & turbine bypass valves	Other	N/A	D	Non-1E	N/A(3)
	7. Main steam leads from turbine control valves to turbine casing	Other	N/A	D	N/A	N/A
	8. Feedwater & condensate system beyond third isolation valve	Other	N/A	D	Non-1E	N/A
	9. Turbine generator	Other	N/A	N/A	Non-1E	N/A
	10. Valves,instrumentation beyond outermost isolation valve	Other	N/A	D	Non-1E	N/A

[a] For definitions and instructions, see section 2.0

Notes (2) and (3), see Page 24

CLASSIFICATION CRITERIA Identification and Classification of Safety-Related Structures, Systems and Components	SARGENT & LUNDY ENGINEERS	CLINTON POWER STATION PROJECT NOS. 4536/4597 REV. 10 9-12-83

Table 3.1 - Classification of Principal Structures, Systems and Components

Number	PRINICIPAL STRUCTURES, SYSTEMS & COMPONENTS	SAFETY∅ (Class 1,2, 3 or Other)	SEISMIC∅ (Category I or N/A)	QUALITY∅ (Group A,B C,D or N/A)	ELECTRICAL∅ (Class 1E, Non-Class 1E or N/A	QA REQ'MTS.J (App. B or N/A)
	REFERENCES:	ANSI N18.2 (ANS-21), ANS-22, ANS-23	Reg. Guide 1.29	Reg. Guide 1.26, ASME-Section III	Reg. Guide 1.32 (IEEE-308)	Reg. Guide 1.28 (ANSI-N45.2), Reg. Guide 1.64 (ANSI-N45.2.11)
XXX	Power Conversion System (cont.)					
	11. Condenser	Other	N/A	N/A	N/A	N/A
	12. Air ejection equipment	Other	N/A	D	Non-1E	N/A
	13. Feedwater treatment system	Other	N/A	D	Non-1E	N/A
	14. Turbine bypass system beyond turbine bypass valve	Other	N/A	D	Non-1E	N/A
	15. Turbine gland sealing system components	Other	N/A	D	Non-1E	N/A
	16. Heater drain piping	Other	N/A	D	N/A	N/A
	17. Heater drain valves	Other	N/A	D	Non-1E	N/A
XXXI	ECCS Equipment Area Cooling					
	1. Fans, & ductwork with safety function	3	I	N/A	1E	B
	2. Heat exchanger pressure retaining components & valves	3	I	C	N/A	B
	3. Instrumentation and control with safety function	3	I	N/A	1E	B
	4. Electrical modules & cables with a safety function	*	I	N/A	1E	B
XXXII	Condensate Storage and Transfer					
	1. RCIC condensate storage tanks	Other	N/A	D	N/A	N/A
	2. Condensate storage tanks	Other	N/A	D	N/A	N/A
	3. Piping and valves	Other	N/A	D	Non-1E	N/A
	4. Piping and valves containment penetrations	2	I	B	1E	B
XXXIII	Auxiliary A-C Power Syste					
	1. All equipment [illegible] for operation Class 2 Mechan.	*	I	N/A	1E	B
	2. All equipment necessary for operation of Safety Class 3 Mechanical Systems	*	I	N/A	1E	B
	3. Other Auxiliary A-C Power Equipment	Other	N/A	N/A	Non-1E	N/A
XXXIV	Miscellaneous Components					
	1. Containment polar crane	3	I	N/A	Non-1E	B
	2. Fuel Building Crane	3	I	N/A	Non-1E	B
	3. Turbine Building Crane	Other	N/A	N/A	Non-1E	N/A
XXXV	Civil Structures					
	1. Containment	N/A	I (4)	N/A	N/A	B
	2. CCCB structure	N/A	I	N/A	N/A	B
	3. Auxiliary building	N/A	I	N/A	N/A	B
	4. Fuel building	N/A	I	N/A	N/A	B
	5. Control building	N/A	I	N/A	N/A	B
	6. Diesel generator and HVAC building	N/A	I	N/A	N/A	B
	7. Radwaste substructure	N/A	I	N/A	N/A	B
	8. Circulating water screen house	N/A	I	N/A	N/A	B
	9. Turbine building	N/A	N/A	N/A	N/A	N/A
	10. Off-gas building	N/A	N/A	N/A	N/A	N/A
	11. Service building	N/A	N/A	N/A	N/A	N/A
	12. Ultimate heat sink	N/A	I	N/A	N/A	B
	13. Radwaste building above grade	N/A	N/A	N/A	N/A	N/A
	14. RPV Pedestal	N/A	I	N/A	N/A	B
	15. Safety-related masonry walls	N/A	I	N/A	N/A	B
	16. Fuel pools & pool liners	N/A	I	N/A	N/A	B

J-For definitions and instructions, see section 2.0

Note (4) - see page 24

Table 3.1 - Classification of Principal Structures, Systems and Components

Number	PRINCIPAL STRUCTURES, SYSTEMS & COMPONENTS	SAFETY[4] (Class 1,2, 3 or Other)	SEISMIC[4] (Category I or N/A)	QUALITY[4] (Group A,B, C,D or N/A)	ELECTRICAL[4] (Class 1E, Non-Class 1E or N/A)	QA REQ'MTS[4] (App. B or N/A)
	REFERENCES:	ANSI N18.2 (ANS-21), ANS-22, ANS-23	Reg. Guide 1.29	Reg.Guide 1.26,ASME-Section III	Reg. Guide 1.32(IEEE-308)	Reg. Guide 1.28 (ANSI-N45.2),Reg. Guide 1.64 (ANSI-N45.2.11)
XXXVI	Other Structures					
	1. Those supporting or protecting safety related equip.	N/A	I	N/A	N/A	B
	2. Cable trays & tray hangers, conduit & conduit hangers in Seismic Category I areas.	Other	I	N/A	N/A	B
XXXVII	Miscellaneous					
	1. Component cooling water sys.	2/3/Other	I,N/A	B/C/D	1E,Non-1E	B,N/A
	a. Valves & piping containment isolation	2	I	B	1E	B
	b. Valves & piping for supplying shutdown service water to the fuel pool heat exchangers	3	I	C	1E	B
	c. Valves & piping for supplying service water to the RR pumps seals	Other	I	C	1E	B
	d. Piping & valves	Other	N/A	D	N/A	N/A
	e. Heat exchangers	Other	N/A	D	N/A	N/A
	f. Storage tank	Other	N/A	D	N/A	N/A
	g. Instrumentation & controls with safety function	2/3	I	N/A	1E	B
	2. Turbine building, closed cooling water system	Other	N/A	D	Non-1E	N/A
	3. Shutdown service water equipment area cooling					
	a. Fans, ductwork & valves with safety function	3	I	N/A	1E	B
	b. Heat exchanger pressure-retaining components & valves	3	I	C	N/A	B
	c. Instrumentation & control with safety function	3	I	N/A	1E	B
	d. Electrical modules & cables with safety function	*	I	N/A	1E	B
	4. Switchgear heat removal					
	a. Fans, ductwork,dampers & valves with safety function	3	I	N/A	1E	B
	b. Heat exchanger pressure-retaining components & valves	3	I	C	N/A	B
	c. Instrumentation & control with safety function	3	I	N/A	1E	B
	d. Electrical modules & cables with safety function	*	I	N/A	1E	B
	e. Refrigeration piping with safety function	Other	I	N/A	N/A	B
	5. Control Room HVAC					
	a. Fans, fan motors, dampers, ductwork, valves,water chiller, chilled water pumps with safety function	3	I	N/A	1E	B
	b. Heat exchanger pressure-retaining components and valves	3	I	C	N/A	B
	c. Electric heaters instrumental & controls with safety function	3	I	N/A	1E	B
	d. Electrical modules & cables with safety function	*	I	N/A	1E	B
	e. Filter units	3	I	N/A	1E	B

[4] For definitions and instructions, see section 2.0

CLASSIFICATION CRITERIA Identification and Classification of Safety-Related Structures Systems and Components	SARGENT & LUNDY ENGINEERS	CLINTON POWER STATION PROJECT NOS. 4516/4597 REV. 10 9-12-83

Table 3.1 - Classification of Principal Structures, Systems and Components

Number	PRINCIPAL STRUCTURES, SYSTEMS & COMPONENTS	SAFETY[4] (Class 1,2, 3 or Other)	SEISMIC[4] (Category I or N/A)	QUALITY[4] (Group A,B, C,D or N/A)	ELECTRICAL[4] (Class 1E, Non-Class 1E or N/A)	QA REQ'MTS[4] (App. B or N/A)
	REFERENCES:	ANSI N18.2 (ANS-21), ANS-22, ANS-23	Reg. Guide 1.29	Reg.Guide 1.26,ASME-Section III	Reg. Guide 1.32(IEEE-308)	Reg. Guide 1.28 (ANSI-N45.2),Reg. Guide 1.64 (ANSI-N45.2.11)
	6. Diesel Generator HVAC					
	a. Fan and ductwork with safety function	3	I	N/A	1E	B
	b. Instrumentation & control with safety function	3	I	N/A	1E	B
	c. Electrical modules & cables with safety function	*	I	N/A	1E	B
	7. Combustible gas control system cooling					
	a. Fan, ductwork w/safety func.	3	I	N/A	1E	B
	b. Heat exchanger pressure-retaining components & valves	3	I	C	N/A	B
	c. Instrumentation & control with safety function	3	I	N/A	1E	B
	d. Electrical modules & cables with safety function	*	I	N/A	1E	B
	Miscellaneous (cont.)					
	8. Fire protection system	Other	N/A	N/A	Non-1E	B
	9. Standby Gas Treatment System Equipment Area Cooling					
	a. Fan & ductwork with safety function	3	I	N/A	1E	B
	b. Heat exchanger pressure retaining components and valves	3	I	C	N/A	B
	c. Instrumentation & control with safety function	3	I	N/A	1E	B
	d. Electrical modules and cables with a safety function	*	I	N/A	1E	B
	10. MSIV Leakage Room Cooling					
	a. Fan & ductwork with safety function	3	I	N/A	1E	B
	b. Heat exchanger pressure retaining components and valves	3	I	C	N/A	B
	c. Instrumentation & control with safety function	3	I	N/A	1E	B
	d. Electrical modules and cables with a safety function	*	I	N/A	1E	B
	11. Meteorological Data Collection Equipment	Other	N/A	N/A	Non-1E	N/A
	12. Postaccident Sample System					
	a. Sample analysis panel	Other	N/A	D	Non-1E	B
	b. Sample monitor panel	Other	N/A	N/A	Non-1E	B
	c. Closed loop cooling system	N/A	N/A	D	Non-1E	B
	d. Containment isolation valves	2	I	B	1E	B
	e. Sample block and back flush valves	Other	N/A	B	1E	B
	f. Drywell floor and equipment drain sump sample pump	Other	N/A	D	Non-1E	B
	g. Containment floor and equipment drain sump sample pump	Other	N/A	D	Non-1E	B

[4] For definitions and instructions, see section 2.0

FOR ILLUSTRATION ONLY

CLASSIFICATION CRITERIA
Identification and Classification of Safety-Related Structures Systems and Components

SARGENT & LUNDY

CLINTON POWER STATION
PROJECT NOS. 4536/4597
REV. 11 4-27-94

Table 3.1 - Classification of Principal Structures, Systems and Components

Number	PRINCIPAL STRUCTURES, SYSTEMS & COMPONENTS	SAFETY[a] (Class 1,2, 3 or Other)	SEISMIC[a] (Category I or N/A)	QUALITY[a] (Group A,B, C,D or N/A)	ELECTRICAL[a] (Class 1E, Non-Class 1E or N/A)	QA REQ'MTS[a] (App. B or N/A)
	REFERENCES:	ANSI N18.2 (ANS-21), ANS-22, ANS-23	Reg. Guide 1.29	Reg.Guide 1.26,ASME-Section III	Reg. Guide 1.32(IEEE-308)	Reg. Guide 1.28 (ANSI-N45.2),Reg. Guide 1.64 (ANSI-N45.2.11)
	13. Postaccident Monitoring Systems					
	a. Piping, within containment pressure boundary and/or with post LOCA function	2	I	N/A	N/A	B
	b. Valves, within containment pressure boundary and/or with post LOCA function	2	I	N/A	1E	B
	c. Electrical and instrumentation modules with post LOCA function	2	I	N/A	1E	B
	d. Cables with safety function	2	I	N/A	1E	B
	14. Equipment for Emergency Response Facilities	N/A	N/A	N/A	Non-1E	B
	15. Fuel Building HVAC system dampers and ductwork with safety function	3	I	N/A	1E	B
XXVII	Combustible Gas Control System					
	1. Hydrogen Recombiner system					
	2. Containment/drywell purge sys					
	a. Drywell Purge Filter Units	Other	I	N/A	Non-1E	N/A
	b. Ductwork	Other	I	N/A	Non-1E	N/A
	c. Post-LOCA Purge (Backup to Hydrogen Recombiners) Valves, Piping, Ductwork	2/Other	I	B,N/A	1E/Non-1E	B
	3. Containment/drywell mixing system	2	I	B	1E	B
	4. Containment/drywell monitoring system	2	I	B	1E	B
	5. Electrical modules with safety function	*	I	N/A	1E	B
	6. Vacuum relief system	2	I	B	1E	B
XXVIII	Suppression Pool Make-up System (SM)					
	1. SM piping	2	I	B	N/A	B
	2. SM valves with safety function	2	I	B	1E	B
	3. Electrical modules with safety function	*	I	N/A	1E	B
	4. Other valves	Other	I	B	Non-1E	B
XL	Auxiliary DC Power System					
	1. Divisional batteries, charge and distribution panels	*	I	N/A	1E	B
	2. Non-divisional batteries, chargers and distribution panels	Other	N/A	N/A	Non-1E	N/A
XLI	Suppression Pool Clean-up System (SF)					
	1. Piping & valves forming part of containment boundary	2	I	B	1E	B
	2. Other piping & valves	Other	N/A	D	Non-1E	N/A

[a] For definitions and instructions, see section 2.3

FOR ILLUSTRATION ONLY
A-13

CLASSIFICATION CRITERIA
Identification and Classification of Safety-Related Structures Systems and Components

SARGENT & LUNDY

CLINTON POWER STATION
PROJECT NOS. 4710/4297
REV. 11 4-27-84

Table 3.1 - Classification of Principal Structures, Systems and Components

Number	PRINCIPAL STRUCTURES, SYSTEMS & COMPONENTS	SAFETY[1] (Class 1,2, 3 or Other)	SEISMIC[1] (Category I or N/A)	QUALITY[1] (Group A,B, C,D or N/A)	ELECTRICAL[1] (Class 1E, Non-Class 1E or N/A)	QA REQ'MENTS[1] (App. B or N/A)
	REFERENCES:	ANSI N18.2 (ANS-21), ANS-22, ANS-23	Reg. Guide 1.29	Reg.Guide 1.26,ASME-Section III	Reg. Guide 1.32(IEEE-308)	Reg. Guide 1.28 (ANSI-N45.2), Reg. Guide 1.64 (ANSI-N45.2.11)
XLII	Demineralizer Make-Up System					
	1. Piping and valves	Other	N/A	D	Non-1E	N/A
	2. Tanks	Other	N/A	D	N/A	N/A
	3. Filters	Other	N/A	D	N/A	N/A
	4. Pumps and motors	Other	N/A	D	Non-1E	N/A
	5. Pretreated filtration components	Other	N/A	D	Non-1E	N/A
	6. Demineralizing train components	Other	N/A	D	Non-1E	N/A
XLIII	Main Steamline Isolation Valve Leakage Control System					
	1. Piping and valves up to the first isolation valve of the inboard subsystem	1	I	A	1E	B
	2. Piping and valves, other	2	I	B	1E	B
	3. Blowers/motors	*	I	N/A	1E	B
	4. Heaters	Other	I	N/A	1E	B
	5. Electric modules with safety function	*	I	N/A	1E	B
	6. Cables with safety function	*	I	N/A	1E	B
XLIV	Containment Isolation					
	1. Piping between the inside and outside containment isolation valves including the isolation valves for systems with no safety function which penetrate the containment	2	I	B	1E	B
	2. Containment penetration assemblies	2	I	B	1E	B
	3. Drywell Guardpipe Bellows (1)	Other	I	D	N/A	B

11

Notes:

(2) All inspection records shall be maintained for the life of the plant. These records shall include data pertaining to qualification of inspection personnel, examination procedures, and examination results.

(3) A program of quality assurance requirements unique to fire protection has been developed by Sargent & Lundy. This program is discussed in detail in Project Instruction PI-CP-015.

[1] For definitions and instructions, see section 2.0

Note (1) - see Page 24

FOR ILLUSTRATION ONLY

APPENDIX B

Revisions to the IP Nuclear Power Construction Quality Assurance Manual

Revisions to this manual will be distributed per Nuclear Planning and Support Procedure NP&S2.51. Controlled Distribution of the Manual is the responsibility of the IP Manager-Nuclear Planning and Support. Persons who are assigned controlled copies of the manual are responsible for maintaining them in accordance with the following:

1. For each revision issued, the manual holders will receive the revised material, a page roster, and an accompanying transmittal which will contain a detachable receipt to be signed and returned to the Nuclear Planning and Support department. This will verify receipt of revisions.

2. When revised material is provided, the obsolete material in each controlled copy shall be removed and destroyed by the assignee.

3. Requests for copies of the Construction Quality Assurance Manual shall be directed in writing to the IP Supervisor - Nuclear Records. All requests shall be authorized by the IP Manager-Quality Assurance.

INFORMATION ONLY

APPENDIX C

SUPPLEMENTAL APPLICATION
IP NUCLEAR POWER CONSTRUCTION QUALITY ASSURANCE PROGRAM

This appendix details in matrix form the chapters of this manual which are applicable in full or in part to:

Fire Protection
Radwaste/Augmented D Systems

10CFR50 Appendix B requires that a quality assurance program be established in writing and executed for activities affecting the safety related function of designated structures, systems, and components to an extent consistent with their importance to safety. Table 3.2-1 in the Clinton Power Station FSAR identifies specifically those structures, systems, and components that are important to safety.

Fire Protection and Radwaste/Augmented-D systems are specifically identified in Table 3.2-1 of the CPS FSAR and/or highlighted in several Regulatory Guides that define and clarify their importance to the plant.

Regulatory Guide 1.120, "Fire Protection Guidelines for Nuclear Power Plants," Revision 1 (November, 1977) states that "A quality assurance (QA) program is needed to identify and rectify errors in design, construction, and operation (of a fire protection system) and is an essential part of the defense in depth". Regulatory Guide 1.143, Revision 0 (July, 1978) states that, "to ensure that systems will perform their intended function a quality assurance program sufficient to ensure that all design, construction, and testing provisions are met should be established and documented."

The extent to which the IP Nuclear Power Construction Quality Assurance Program applies to each of the two areas varies as defined further under subsequent sections of this appendix. The attached matrix outlines which chapters of this manual apply to Fire Protection and Radwaste/Augmented D systems.

INFORMATION ONLY

MATRIX

CHAPTERS OF THE IP NUCLEAR POWER
CONSTRUCTION QUALITY ASSURANCE MANUAL
APPLICABLE TO FIRE PROTECTION AND RADWASTE/AUGMENTED D

CONSTRUCTION QA MANUAL CHAPTER	FIRE PROTECTION	RADIOACTIVE WASTE/ AUGMENTED D
1.	YES	YES
2.	YES	YES
3.	YES	YES
4.	YES	YES
5.	YES	YES
6.	YES	YES
7.	YES	YES
8.	NO	NO
9.	NO	YES
10.	YES	YES
11.	YES	YES
12.	NO	NO
13.	NO	YES
14.	YES	YES
15.	YES	YES
16.	YES	YES
17.	YES	YES
18.	YES	YES

NOTE: Structures, systems and components subject to the above requirement are described by FSAR Table 3.2.-1 and further defined by engineering specifications, drawings, procedures, instructions, other documents, etc.

INFORMATION ONLY